

**PSX 850**

**8/10 CHANNEL POWER MIXER**

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### Important Notes

**CAUTION:** The unit must be protected from humidity to prevent the risk of fire or electric shock.

1. Make sure that you have the correct mains voltage. Only operate with the unit with the mains voltage marked on the rear panel.
2. Ensure that no objects (in particular metal objects) are inserted into the unit. This could cause severe electric shock or give rise to malfunction.
3. If the unit is suddenly moved from a cold place to a warm place, e.g. transporting from outside into a heated room, condensation will occur. In this case you should not switch the unit on until it has warmed up to room temperature.
4. In the event of water or any other fluid being accidentally spilt on the unit, switch the unit off immediately and send it to a qualified service workshop for inspection.
5. Always ensure that the unit is well ventilated and never exposed to direct sunlight.
6. Do not use sprays to clean the unit as these may cause damage to it and could suddenly ignite.

### PSX 850 - GENERAL OVERVIEW

- 8 Input channels = 6 x Mic/Line + 2x Mic / 2x Line Stereo
- 3 band equalizer in each input channel
- Digital 16 bit stereo effect unit with 6 reverb, 8 delay programs and 2 special effects
- 48 V Phantom Power
- 1 effect path
- 1 AUX/Monitor path
- Controllable Line In and Line Out path
- Controllable Tape Record and Tape Playback path
- Big 2 way LED Level Meter
- 2 x 250 Watts (RMS/4 Ohms) PCA processor power amplifiers

The mixer of the PSX compact power mixers is equipped with a wide range of features. The stereo input channels allow the connection of stereo program sources like keyboards, drum machines, tape recorders and additional mixing desks. Thus a lot more sound sources can be connected than with conventional power mixers. The stereo input channels can also be used as regular mic input channels. All mic inputs are electronically balanced and equipped with XLR sockets. 48 volt Phantom power can be switched to the mic sockets.

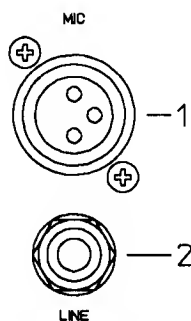
The effect section is equipped with a digital 16 bit stereo reverb/delay module. The effect unit generates different, extremely natural sounding stereo reverb programs, special stereo programs which combine the reverb programs with additional echoes, and a stereo chorus program especially structured for vocals, brass and woodwinds. In addition 8 different delay and echo programs with excellent quality are available from the ARS 10 DSP effects board. The number of echo repeats is front-panel controllable.

The master section is equipped very comprehensively with separate control functions, e.g. for tape playback and record, connection for an additional external stereo effect unit, separately controllable AUX/LINE output/input and big LED level meter for the power amplifiers.

The PCA processor power amplifiers are designed in advanced Hi-Power MOS technology. The frequency and phase response of the loudspeaker cabinets connected is linearized in the low-frequency region with a 2<sup>nd</sup> order shelving eq. The corner frequencies of the 2<sup>nd</sup> order shelving eq have been designed to match the characteristics of modern high-efficiency loudspeaker cabinets. A built-in fast acting limiter prevents excessive overdrive.

The power outputs of the power amps are equipped with speakon adapters. These connectors were developed especially for the peak performance of modern power amps and guarantee a safe and loss-free connection of loudspeaker cables with the greatest possible cable cross-sectional areas.

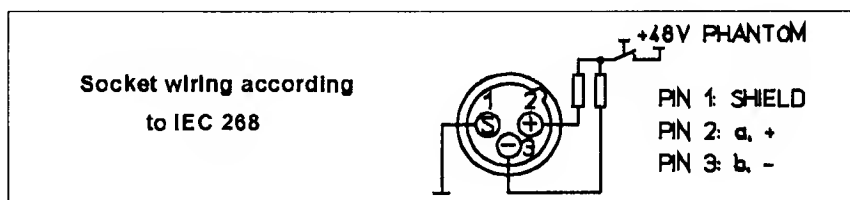
## INPUT/MONO



### 1. Mic

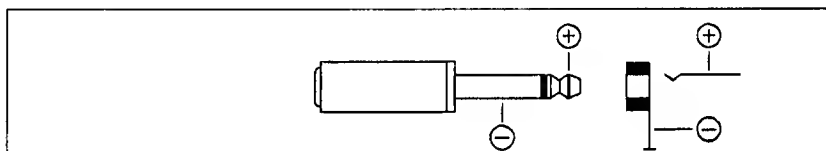
Electronically balanced XLR inputs 1-6 for connection of low- impedance microphones. Also phantom-powered microphones (condensor microphones) can be connected to these sockets.

For further information see: **38. Phantom Power.**



### 2. LINE

Unbalanced inputs 1-6 for instruments and other high level signal sources. The insertion of a plug into this socket will switch off the XLR input.



**Please make sure that the respective channel fader or at least both master faders are closed before connecting signal sources, to protect your audience from annoying click noise.**

### 3. GAIN + PEAK LED

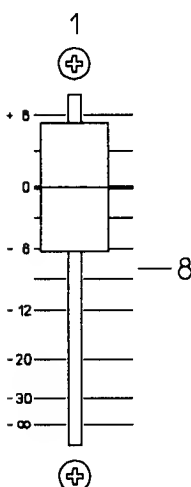
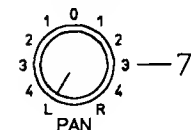
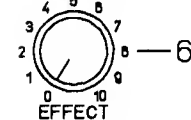
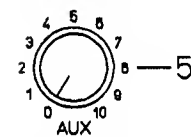
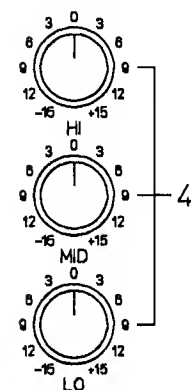
Control for adjusting the input sensitivity between -56 dBV (1.5 mV) and -20 dBV (95 mV).

This control should be adjusted so that the PEAK LED lights up only briefly at level peaks. This will result in an optimum S/N ratio. If the PEAK LED lights up, the available headroom is 10 dB before the input signal is distorted audibly. Please note that the sound corrections with the EQ controls influence the input signal level as well. Check the correct setting of the GAIN control again after sound adjustment.

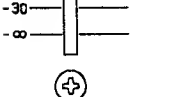
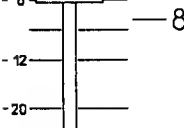
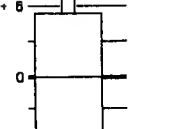
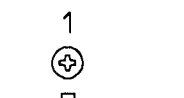
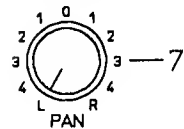
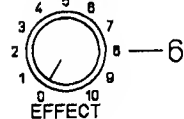
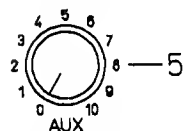
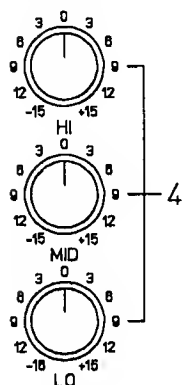
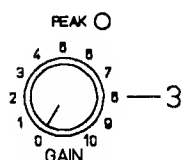
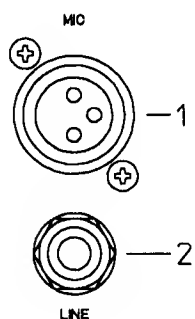
### 4. EQUALIZING

The EQ section allows for a very comprehensive and effective control of the input signal for the different frequency regions. Turning the control to the right increases the respective frequency region.

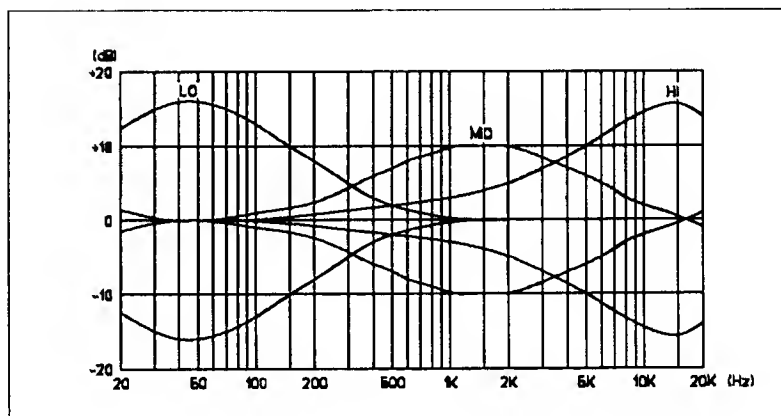
When adjusting you should always start in a neutral position, i.e. all controls are in central position. If possible, do not use extreme control positions; normally a small sound correction is enough and delivers the best sound quality. Take as orientation the naturalness of the reproduction and depend on your musically trained ear for sound checking. You can effectively avoid acoustic feedback by operating the mid control (MID) gently. Avoid too much gain especially in this frequency region; a light lowering allows an amplification of microphone signals with little danger of feedback.



## 4. EQUALIZING (continuation of page 4)



Control	Variation	Frequency	Type
HI	+/-15 dB	15 kHz	shelving
MID	+/-10 dB	1.5 kHz	boost/cut
LO	+/-15 dB	50 Hz	shelving



## 5. AUX

Control for adjusting the AUX level. This control is electrically arranged after (post fader) the channel fader (8), so that the signal level depends on the position of the channel fader.

The AUX path can be used to send a signal to a separate external effect unit or to drive a separate monitor power amp.

For further information see : **26-29. AUX.**

## 6. EFFECT

Control for sending a signal to the built-in digital effect unit (reverb/delay). This control is also arranged after (post fader) the channel fader (8); the effect signal level depends on the position of the channel fader as well.

Please control the send signal to the integrated effect module carefully. The PEAK indication of the effect module (22) may only light up briefly at dynamic signal peaks. If the LED is lit continuously, the unit is being overdriven.

For further information see: **20-25. EFFECT**

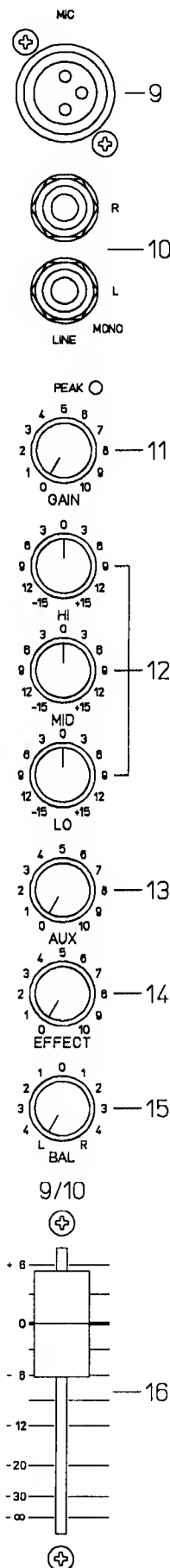
## 7. PAN

This control determines the stereo position of the input signal. In central position the signal is divided into equal parts on both master channels left and right.

## 8. Channel Fader

The channel fader is used to adjust the volume of the single channel and the volume balance between the individual channels.

Try to adjust the fader near the 0 dB position. This will also enable you to adjust the volume with sufficient control displacement even if you have great level differences between the different input channels. The master volume of the complete unit is controlled by the master faders (19).

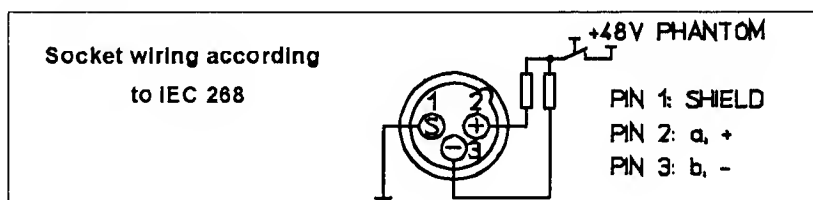


## INPUT/STEREO

The input channels 7 and 8 are designed completely in stereo. You can connect all types of stereo signal sources (e.g. drums, synthesizers, samplers or submixers).

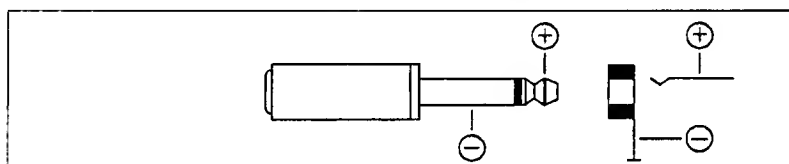
### 9. Mic

The stereo input channels can, of course, also be operated in mono. With low impedance microphones you should use the XLR socket MIC and with higher level signal sources the jack LINE L/MONO (10).



### 10. LINE

Unbalanced inputs L + R for instruments and other high level signal sources. The insertion of a plug into these sockets will switch off the XLR input.



Please make sure that the respective channel fader or at least both master faders are closed before connecting signal sources, to protect your audience from annoying click noise.

### 11. GAIN + PEAK LED

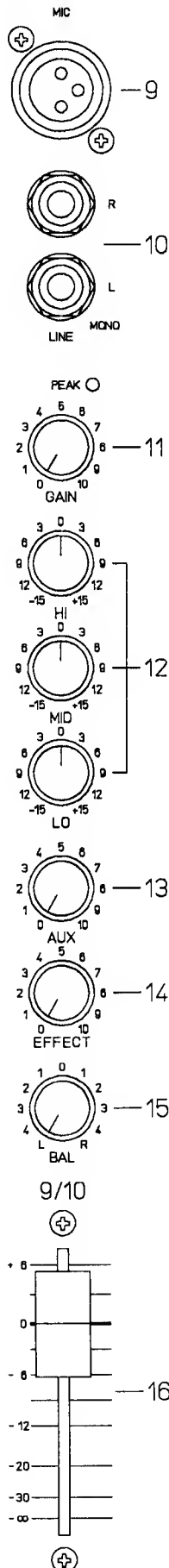
Control for adjusting the input sensitivity between -56 dBV (1.5 mV) and -20 dBV (95 mV).

This control should be adjusted so that the PEAK LED only lights up briefly at signal peaks. This will result in an optimum S/N ratio. If the PEAK LED lights up, the available headroom is 10 dB before the input signal is distorted audibly. Please note that the sound corrections with the EQ controls influence the input signal level as well. Check the correct setting of the GAIN control again after adjusting the sound.

### 12. EQUALIZING

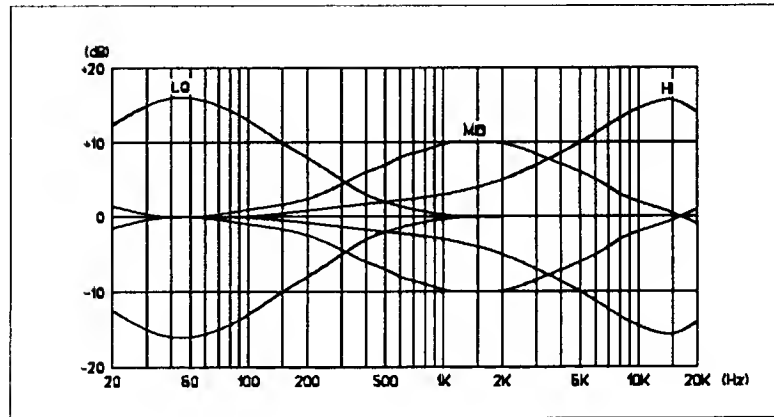
The EQ section allows for a very comprehensive and effective control of the input signal for the different frequency regions. Turning the control to the right increases the respective frequency region.

When adjusting you should always start at a neutral position, i.e. all controls are in central position. If possible, do not use extreme control positions; normally a small sound correction is enough and delivers the best sound quality. Take as orientation the naturalness of the reproduction and depend on your musical trained ear for sound checking. You can effectively avoid acoustical feedback by operating of mid control (MID) gently. Avoid too much gain especially in this frequency region; a slight lowering allows an amplification of microphone signals with little danger of feedback.



## 12. EQUALIZING (continuation of page 6)

Control	Variation	Frequency	Type
HI	+/-15 dB	15 kHz	shelving
MID	+/-10 dB	1.5 kHz	boost/cut
LO	+/-15 dB	50 Hz	shelving



## 13. AUX

Control for adjusting the AUX level. This control is electrically arranged after the channel fader (16), so that the signal level depends on the position of the channel fader.

The AUX path can be used to send a signal to a separate external effect unit or to drive a separate monitor power amp.

For further information see: 26-29. AUX.

## 14. EFFECT

Control for sending a signal to the built-in digital effect unit (reverb/delay). This control is also arranged after the channel fader (8); the effect signal level also depends on the position of the channel fader.

Please carefully control the send signal to the integrated effect module. The PEAK indication of the effect module (22) may only light up briefly at dynamic peaks. If the LED lights continuously, the unit is being overdriven.

For further information see: 20-25. EFFECT

## 15. BAL

This control determines the stereo position of the input signal. In central position the stereo signal is divided equally between both master channels left and right.

Please note that the right channel of a stereo signal connected to the input is attenuated if the BAL control is rotated to the left. The same applies for the left channel, if the BAL control is turned to the right.

## 16. Stereo Channel Fader

The channel fader is used to adjust the volume of the single channel and the volume balance between the individual channels.

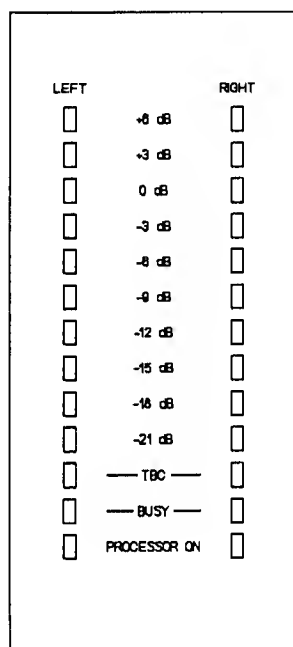
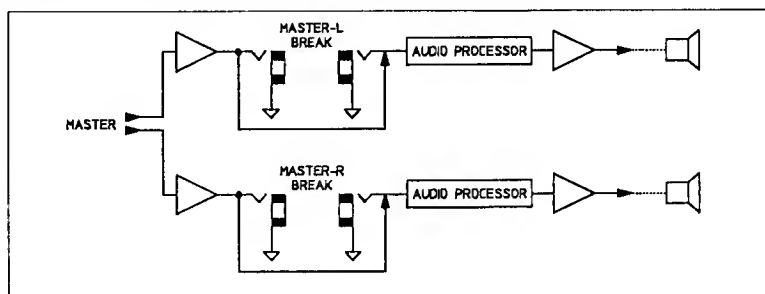
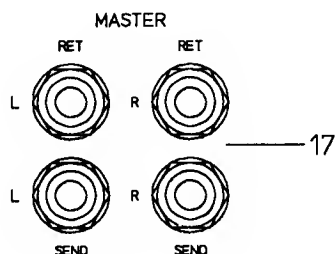
Try to adjust the fader near the 0 dB position. This will also give you the possibility to adjust the volume with sufficient control displacement even if you have great level differences between the different input channels. The master volume of the complete unit is controlled by the master faders (19).

## MASTER

### 17. MASTER RET/SEND

These jacks are used for looping in an equalizer etc. into the master signal path.

The return jacks RET interrupt the master signal. The SEND jacks can also be used as master out e.g. for additional power amps.



### 18. LEFT + RIGHT LED Level Meter

The two LED Level Meters show the power modulation of the two power amplifiers. The area from +3 dB to +6 dB indicates risk of overdriving.

**Please avoid overdriving. The unit or connected loudspeaker cabinets could be damaged.**

### TBC

The short-term peak output power of the PCA power amps is considerably higher than the rated output power in order to give you excellent dynamic behaviour. The "dynamic headroom" (IHF-A) is 1.5 dB which is equivalent to approximately 350 Watts/4Ohms output power. The TBC circuit contains a simple 1<sup>st</sup> order voice coil model to simulate the thermal behaviour of a typical woofer. At continuous overdriving or modulation with square wave signals this part of the processor reduces the power output to the rated output (250 W / 4 ohms), to protect the connected loudspeaker system against thermal overload of the woofer's voice coil.

**Please note that speakers with less power capability than the rated power cannot be protected completely by the "Thermal Brain Circuit".**

### BUSY

This indicator lights up if the limiter part of the processor is activated. Continuous lighting of the BUSY LED indicates danger of overdriving the amp and should be avoided by reducing the output volume.

### PROCESSOR ON

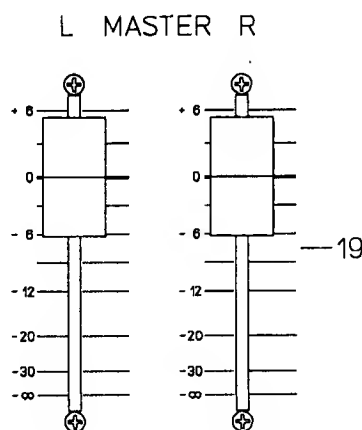
These LED's indicate that the unit is ready for operation.

### 19. MASTER L + R

Master volume control for the left and right master output.

For further information see: 40. SPEAKER OUTPUTS

**Please make sure that the respective channel fader or at least both master faders are closed before connecting signal sources, to protect your audience from annoying click noise.**

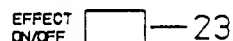
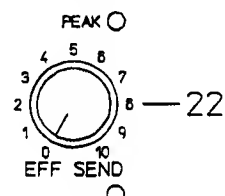
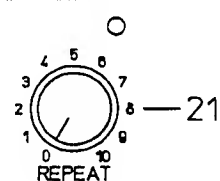
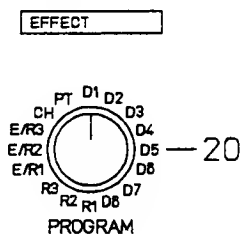




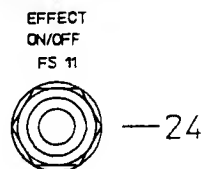
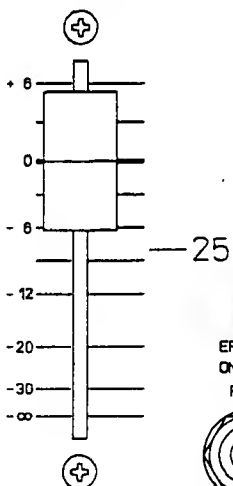
## EFFECT

## 20. PROGRAM

Program switch for 16 effect programs



EFF RET



REVERB
R1 SMALL REV
R2 MEDIUM REV
R3 LARGE REV
E/R1 E/R SMALL
E/R2 E/R MEDIUM
E/R3 E/R LARGE
CH CHORUS
PT PITCH

## CHARACTERISTICS:

SHORT REVERB TIME, SMALL ROOM  
 MEDIUM REVERB TIME, MEDIUM HALL  
 LARGE REVERB TIME, LARGE HALL  
 ECHO/REVERB, SMALL ROOM  
 ECHO/REVERB, MEDIUM HALL  
 ECHO/REVERB, LARGE HALL  
 FOR VOCALS, BRASS, WOODWINDS  
 DUAL PITCH SHIFTER

DELAY
D1 DELAY 60 ms
D2 DELAY 100 ms
D3 DELAY 170 ms
D4 DELAY 280 ms
D5 DELAY 460 ms
D6 L-R DLY 170 ms
D7 L-R DLY 280 ms
D8 L-R DLY 460 ms

## 21. REPEAT + LED

With this control the amount of echo repeats will be adjusted.  
 The green LED indicates that this control is active.

## 22. EFF SEND + PEAK LED

With this rotary control you can adjust the input level for the built-in effect unit. The PEAK LED indicates risk of overdriving the effect unit. Please adjust the control EFF SEND so that the LED only lights up briefly at dynamic signal peaks.

## 23. EFFECT ON/OFF + LED

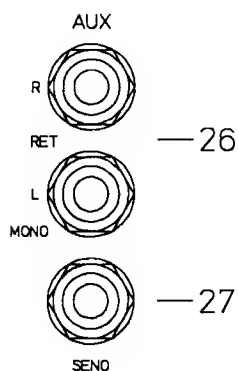
Pushing this button (green LED lights up) will switch on the effect module.

## 24. EFFECT ON/OFF FS-11

The effect can be switched on and off by the foot switch FS-11. The button EFFECT ON/OFF (23) must be pushed and a foot switch FS-11 has to be connected to the jack (24). The red LED in the foot switch lights up if the effect is ON.

## 25. EFF RET

Stereo fader for adding the effect signal to the master signal.

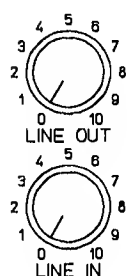


## AUX

### 26. AUX RET R + L/MONO

Jacks for feeding a stereo signal into the master bus. When using e.g. an external stereo effect unit, connect the output socket of this unit to the jacks AUX RET R + L. If you have a mono unit, use the jack AUX RET L/MONO.

The control AUX RET (28) controls the volume of the signal added to the master bus.



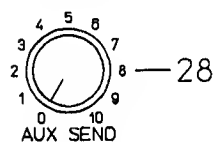
### 27. AUX SEND

#### 28. AUX SEND CONTROL

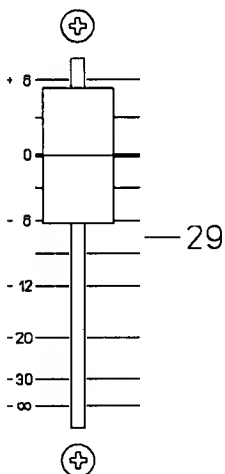
An AUX signal can be fed e.g. to an external effect unit or a separate monitor power amp via the AUX SEND jack (27).

The master send level is controlled by the AUX SEND control (28).

The AUX controls of the input channels (5, 13) allow a separate adjustment of the aux signal level of the respective channel.

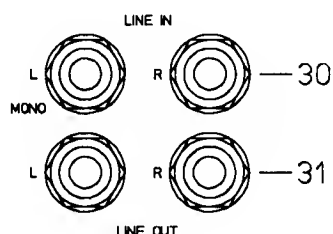


AUX RET



### 29. AUX RET

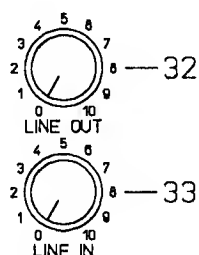
Stereo volume control for mixing the AUX return signal into the master signal (e.g. effect volume).



## LINE

### 30. LINE IN L/MONO + R

You can feed in a stereo signal, e.g. from submixers via these jacks. This signal is fed to the master bus (like the other input channels).



### 31. LINE OUT L + R

You can take the master bus signal (pre master fader) from these sockets. The LINE OUT signal therefore does not depend on the position of the MASTER L + R faders (19). You can feed via these jacks a separately controllable master bus signal e.g. to a master mixing desk or into an separate amplifier / speaker circuit for monitor purposes.



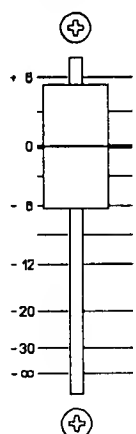
### 32. LINE OUT control

With this stereo control knob you can adjust the output signal for the LINE OUT jacks (31).

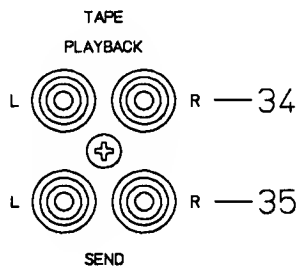


### 33. LINE IN control

With this stereo control knob you can control the input signal, coming from the LINE IN jacks (30) and the mixing in of this signal into the master bus. The master volume depends on the position of the MASTER L + R faders (19).



# TAPE



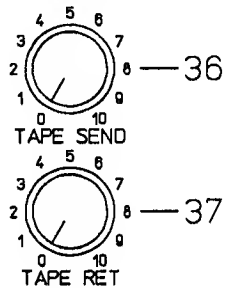
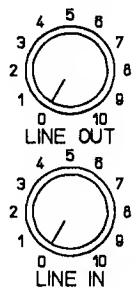
## TAPE

### 34. TAPE PLAYBACK

You can playback a tape or cassette recording via these sockets. The volume is controlled by the TAPE RET control (37) and is not dependent on the position of the master faders (19).

### 35. TAPE SEND

From these sockets you can take the master bus signal for tape recording. The recording level is controlled by the TAPE SEND control (36) and is not dependent on the position of the master fader (19).

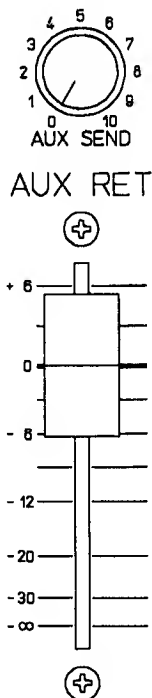


### 36. TAPE SEND control

With this stereo control knob you can control the output signal of the TAPE SEND sockets (35). This control is for driving a connected tape recorder or cassette player.

### 37. TAPE RET control

This stereo control adjusts the volume of the tape playback. This tape signal is fed in after the Master L + R faders (19) and is therefore not dependent on the position of the MASTER L + R faders (19).



You can play back tape signals at any volume without altering the master volume.

## MASTER

PHANTOM  
POWER

ON



— 38

**38. PHANTOM POWER**

Central switch for the 48 V phantom power supply for the MIC sockets (1, 9).

If you are using phantom powered microphones (e.g. condensor microphones), they can be supplied by the PSX power supply. Separate batteries for the microphones are not necessary.

**Please only switch the phantom power supply on and off if the PSX 850 is switched off.**

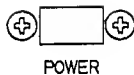
**With PHANTOM POWER ON you must not connect unbalanced signal sources (keyboards, mixers) to the XLR sockets. These units could be damaged or destroyed by the phantom voltage.**

**ATTENTION! Important Note!**

**Basically speaking, phantom-powered microphones and balanced dynamic microphones can be operated simultaneously.**

**However, there are some balanced dynamic microphones, which are especially sensitive and could possibly be damaged by the phantom voltage. Please read the operating manuals of your microphones carefully.**

**For reasons of safety, always ensure that the PSX 850 is switched off (39. POWER), if balanced dynamic microphones are to be connected to the mic input sockets. You will thus avoid possible damage of these especially sensitive dynamic microphones.**



— 39

POWER

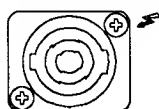
**39. POWER**

Mains switch for switching the unit on and off.

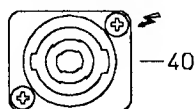
The unit is ready for operation if both PROCESSOR ON LEDs (18) are lit and the power relays have switched the output stages to the speaker outputs.

**Make sure that both master volume faders are closed when you switch the unit on. You will protect your audience and your equipment from unnecessary inconvenience caused by unwanted amplification and possible feedback.**

RIGHT  
SPEAKER OUTPUT  
RATED Z 4 OHMS  
RATED POWER 250W

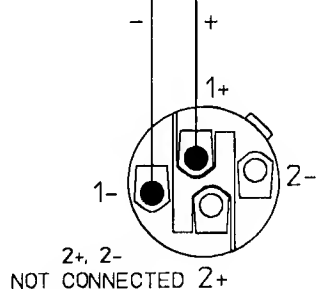
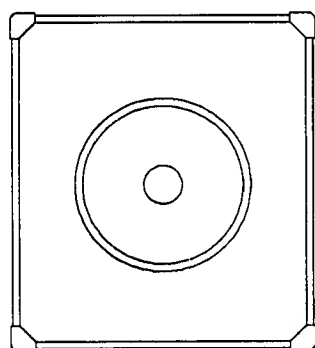
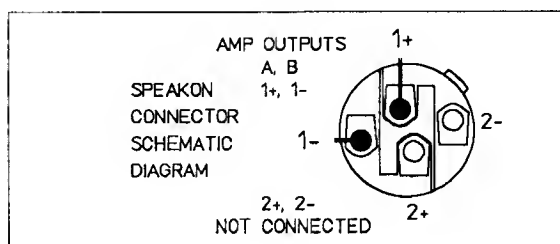


LEFT  
SPEAKER OUTPUT  
RATED Z 4 OHMS  
RATED POWER 250W



## 40. SPEAKER OUTPUT RIGHT + LEFT

The PSX power mixers are supplied with professional SPEAKON high power connectors. This mechanically and electrically safe connection complies with all safety demands and regulations and allows the use of high-powered loudspeaker cables up to a cross-sectional area of 4 x 2,5 mm<sup>2</sup>.



## Check the polarity of the connected speaker cabinets

To prevent acoustic cancellation problems, the polarity of the loudspeaker cabinets connected to the outputs must be equal. Otherwise the bass can sound muddy, suppressed and unprecise and weird midrange lobing problems can occur.

A very simple checking method involves a 9 V battery. If the + pole of the battery is connected to the + pole of the loudspeaker connector, the cone of the woofer should move outwards.

The correct polarity of mid-range and high-range speakers cannot be checked in this way, because some crossover networks change the polarity of speakers in the mid-range and high-range region.

E-V loudspeaker cabinets are internally wired correctly and do not need any polarity check procedure.

**SPECIFICATIONS**

OVERALL TEST DATA PSX 850

Standard specifications: IEC 268 part 3

0 dB = 1 V (RMS)

**A. POWER SUPPLY**

1. Mains:	AC
2. Rated voltage:	120 V
3. Rated frequency:	50 - 60 Hz
4. Rated power consumption:	1100 watts
5. Normal power consumption:	320 watts
6. Tolerance of mains voltage:	± 10%

**B. INPUT CHARACTERISTICS**

Input sockets	Rated Input Level	*1 Max. Input Level
MIC	-56dB (1.5 mV)	-2dB (780 mV)
LINE (Mono)	-38dB (13 mV)	+18dB (7.6 V)
LINE (L + R)	-38dB (13 mV)	+18dB (7.6 V)
TAPE-PLAYBACK (L+R)	-15dB (180 mV)	+12dB (4.0 V)
LINE-IN/MASTER (L+R)	-10dB (300 mV)	+11dB (3.8 V)
AUX-RETURN (L + R)	-8dB (400 mV)	+11dB (3.8 V)
MASTER BREAK/RETURN	0dB (1.0 V)	n.V.

**C. OUTPUT CHARACTERISTICS**

Output sockets	Rated Load Impedance	Output Level *2	
		Rated Value	Max. Level before Clipping
SPEAKER (L + R)	4 ohms	250 watts	n.v.
	8 ohms	180 watts	n.v.
MASTER BREAK (L+R)	10 kohms	0dB (1.0 V)	[+13dB (4,5 V)]
AUX SEND	10 kohms	+8dB (2,6 V)	+17dB (7,5 V)
LINE OUT (L+R)	10 kohms-2dB (800 mV)	+12dB (3,8 V)	
TAPE RECORD (L+R)	47 kohms-2dB (800 mV)	+ 12dB (3,8 V)	

Output Sockets	Stabilizing
SPEAKER (L + R)	2% (0.17dB)

# SPECIFICATIONS

---

## SINGLE CHANNEL OUTPUT POWER

(measured with "Dynamic Headroom" test signal according IHF-A: 1 kHz Tone burst, 20 ms ON, 480 ms OFF)

SPEAKER (L or R), 4 ohms 355 watts

DYNAMIC HEADROOM 1,5 dB

## C. FREQUENCY RESPONSE

-3 dB referenced to mid-band level

1. MIC — SPEAKER : 8 Hz - 55 kHz

2. LINE — SPEAKER : 8 Hz - 30 kHz

## D. AMPLITUDE NON-LINEARITIES

1. Rated Total Harmonic Distortion  $k \leq 0,3 \%$

2. Norm Total Harmonic Distortion  $k \leq 0,03 \%$

( power amp only : measured from  
BREAK RETURN to SPEAKER OUT)

3. Norm Total Harmonic Distortion  $k_2 < 0,018 \%$

( mixer only: measured on BREAK SEND)

all higher distortion products lower than measuring limit (measured with spectrum analyzer)

## E. NOISE LEVEL

- $R(Q) = 200$  Ohms between pin 2 and pin 3 of the XLR input socket
- $U(F)$  = Noise voltage, unweighted with  $B = 20$  Hz ... 20 kHz, quasi peak-weighted (IEC 268-1)
- $U(G)$  = Noise voltage, frequency weighting filter according CCIR, quasi peak-weighted (IEC 268-1)
- $U(A)$  = Noise voltage, dB(A) frequency-weighted, RMS (IEC 268-1)
- S/N ratio ref. rated output voltage (power)

### 1. Rated noise level (typ.)

	Noise- Voltage	S/N- Ratio	equiv. input noise voltage	equiv. input noise level
1.1 $U(F)$	40 mV	58 dBq	1,9 $\mu$ V	-114 dB
1.2 $U(G)$	82 mV	52 dBqp	3.9 $\mu$ V	-108 dB(G)
1.3 $U(A)$	16 mV	66 dBp	0,76 $\mu$ V	-122 dB(A)

### 2. Residual output noise

2.1  $U(F)$  = 1,7 mV ( 85 dBq )

2.2  $U(G)$  = 3,1 mV ( 80 dBqp )

2.3  $U(A)$  = 0,7 mV ( 93 dBp )



### F. Crosstalk attenuation

1. Input channel to input channel    lower than noise level
2. Stereo channel: R  $\longrightarrow$  L    50 dB  
                                 L  $\longrightarrow$  R    50 dB

### G. Dimensions

Height : 200 mm  
Width : 500 mm  
Depth : 502 mm

### H. Weight

19 kg (41,8 lbs)

\*1 : All frequency-dependent level controls full open

\*2 : All output levels measured with the measurement signal connected to a MIC input

Subject to modification without notice!

# ***SERVICE***

## SPECIFICATIONS: PSX 850 complete unit

General measuring conditions if not noted elsewhere otherwise:

\* Measuring Tolerance:

$$\Delta X = \pm 1.5 \text{ dB}$$

\* Measuring Frequency:

$$f = 1 \text{ kHz}$$

\* All Levels related to:

$$E_o = 775 \text{ mV (0dBu)}$$

\* Gain controls fully to the right

\* EQ controls into center position

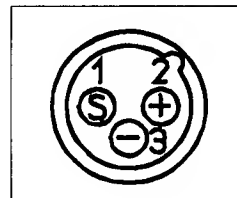
\* PAN controls into center position

\* Pinning of the XLR - socket:

PIN 1 = SHIELD

PIN 2 = + INPUT

PIN 3 = - INPUT



\* Source impedance for XLR input:

$$R(Q) = 200 \text{ Ohms}$$

### 1. Mains Voltage:

$$E(P) = 220V / 50Hz$$

- can be soldered to 110 V or 240V

### 3. Power consumption:

3.1. Without load

$$P(P) = 60 \text{ W}$$

3.2. At rated power

$$P(P) = 1100 \text{ W}$$

### 4. Adjustments:

#### 4.1. INTERNAL OFFSET:

\* Adjust channel R with R055 on TP CN12 to 0 Volt  $\pm 50 \text{ mV}$ .

\* Adjust channel L with R122 on TP CN19 to 0 Volt  $\pm 50 \text{ mV}$ .

#### 4.2. PROCESSOR CONTROL VOLTAGE:

\* Check voltage drop on R066 (channel R) and R133 (channel L):  $E = \min 1.2 \text{ V} \dots 1.5 \text{ V}$

#### 4.3. PROCESSOR ADJUSTMENT:

\* Drive both channels until  $E(O) = 16 \text{ V}$ , close service switch channel R = S003, channel L = S004 and adjust output voltage with R024 and R029 to minimum.

$f = 1 \text{ kHz}$ , attenuation  $> 40 \text{ dB} \rightarrow E(O) = 160 \text{ mV}$

#### 4.4. PROCESSOR OFFSET:

Open and close service switches S003 and S004 rhythmically and adjust with R028 and R033 to a minimum offset (with oscilloscope to minimum peak) on the amplifier output.

#### 4.5. ADJUSTMENT OF IDLE CURRENT:

The idle current measurement of the amplifier PCB 84120 can be performed indirectly. Remove the fuse in the + or - power supply (F01/F02 or F03/F04) and replace it with a 0.1 Ohms resistor. Adjust voltage drop to 5 mV (= 50 mA).

#### 4.6. PROCESSOR TEST:

Drive both channels until  $E(O) = 31.6$  V; rise input voltage by 10 dB -> BUSY LED will light up, output voltage will rise about 2 dB to 40 V.

#### 4.7. TBC TEST:

Switch unit off. Switch it on again after approx. 10 sec. (TBC circuit is empty) with  $E(I) + 10$  dB. BUSY LED lights up,  $E(O) = 40$  V. After approx. 30 sec. the TBC safety circuit will respond and reduce the output voltage to approx. 31.6 V (TBC LED lights up).

#### 4.8. POWER ON DELAY:

After approx 2 sec. the relays E002 (current limiting), E003 and E004 (AF Output) will pick up together.

#### 4.9. FAN CONTROL:

Both fans normally run "slow"

Switch up from slow -> fast at  $E = 9.6$  V on CN20 Pin 8 (approx. 80° C)

Switch back from fast -> slow at  $E = 11.4$  V on CN20 Pin 8 (approx. 60° C)

#### 4.10. SHORT CIRCUIT TEST:

Drive both channels separately to 31.6 V at 4 Ohms. Connect a 1 Ohms load-resistor parallel. The power consumption will rise to approx. 1100 W and falls then continuous to approx. 700 W (30 sec.). BUSY LED lights up!

### 5. Meter Adjustment

Feed in a signal via an input channel, so that on Master Out  $E(O) = 775$  mV can be measured. Adjust meter with trim resistors R101 and R102 (on Master Meter PCB 82165), so that all green LED's light up.

### 6. Input channel Mono

- \* Gain control fully to the right
- \* EQ controls and PAN control into center position
- \* CHANNEL and MASTER FADER L/R fully opened
- \* AUX control fully to the right

Input	$E(I)$	Test point	$E(O)$	Comment
MIC	1.3 mV	MASTER SEND L/R	1.05 V	
LINE	13 mV	MASTER SEND L/R	1.05 V	
LINE	57 mV	-----	---	PEAK lights up
LINE	13 mV	AUX SEND	2.6 V	AUX SEND control fully opened

## 7. Input channel Stereo

- \* Gain control fully to the right
- \* EQ controls and PAN control into center position
- \* CHANNEL and MASTER FADER L/R fully opened
- \* AUX control fully to the right

Input	E(I)	Test point	E(O)	Comment
MIC	1.3 mV	MASTER SEND L/R	1.05 V	
LINE/L	13 mV	MASTER SEND L/R	1.05 V	
LINE/L	57 mV	-----	----	PEAK lights up
LINE/R	13 mV	MASTER SEND R	1.05 V	
LINE/L	13 mV	AUX SEND	2.6 V	AUX SEND control fully opened

## 8. AUX/LINE/TAPE

- \* Open the control, mentioned under comment, fully.

Input	E(I)	Test point	E(O)	Comment
PLAYB L/R	180 mV	MASTER SEND L/R	1.05 V	TAPE RETURN
AUX RET L	400 mV	MASTER SEND L/R	1.05 V	AUX RET/MASTER
AUX RET R	400 mV	MASTER SEND R	1.05 V	AUX RET/MASTER
LINE IN L	300 mV	MASTER SEND L/R	1.05 V	LINE IN/MASTER
LINE IN R	300 mV	MASTER SEND R	1.05 V	LINE IN/MASTER

- Make following settings in the input channel:

- \* Gain control fully to the right
- \* EQ controls and PAN control into center position
- \* CHANNEL FADER fully opened
- \* AUX control fully to the right

Input	E(I)	Test point	E(O)	Comment
LINE/CHANNEL	13 mV	REC SEND L/R	780 mV	TAPE SEND
LINE/CHANNEL	13 mV	LINE OUT L/R	780 mV	LINE OUT

## 9. EFFECT

### 9.1. TEST EFFECT BUS

- Make following settings in the input channel:

- \* Gain control fully to the right
- \* EQ controls and PAN control into center position
- \* CHANNEL FADER fully opened
- \* EFFECT control fully to the right

- E(I) = 6.8 mV to LINE INPUT → EFF PEAK LED lights up

- Plug in a microphone, make proper level settings in the input channel, switch EFFECT ON and check the function of the effect unit by your ear.

## 9.2. REPEAT LED

With the Delay programs (D1...D8) the REPEAT LED must light up.

## 9.3. EFFECT ON/OFF

\* EFFECT ON button pushed → EFFECT ON LED lights up

\* Connect a foot switch FS11 to socket FS → LED EFFECT ON and LED in the FS switch on and off together when pushing the foot switch.

## 10. Frequency responses

### 10.1. EQ Input Channel Mono/Stereo

- E(I) to LINE - Eingang
- E(O) on MASTER SEND L/R
- not mentioned EQ controls into center position
- Plot 1: LO control fully to the right
- Plot 2: LO control fully to the left
- Plot 3: MID control fully to the right
- Plot 4: MID control fully to the left
- Plot 5: HI control fully to the right
- Plot 6: HI control fully to the left
- Plot 7: all controls into center position

### 10.2. MIC --- power amplifier L/R

- E(I) to XLR socket Pin 2 (Pin 1, Pin 3 to ground)
- E(O) on SPEAKER OUT L/R
- EQ control into center position

### 10.3. Power amplifier L/R 20 Hz - 20 kHz

- E(I) to MASTER RETURN L/R
- E(O) on SPEAKER OUT L/R

### 10.4. Power amplifier L/R 200 Hz - 200kHz

- E(I) to MASTER RETURN L/R
- E(O) on SPEAKER OUT L/R

## 11. Noise voltages

- measured on SPEAKER OUT L/R
- measured with Sennheiser UPM 550-1
- $R(Q) = 150 \text{ Ohm}$  between Pin 2 and Pin 3 of the XLR input socket
- $E(F)$  = Noise voltage, unweighted with  $B = 20 \text{ Hz} \dots 20 \text{ kHz}$
- $E(G)$  = Noise voltage, frequency weighting filter according CCIR 468
- Voltages peak weighted (if not mentioned otherwise)

- 11.1 - All faders closed
- E(F)    ≤ 2.1 mV**  
**E(G)    ≤ 3.5 mV**
- 11.2 - MASTER Fader opened
- E(F)    ≤ 3.2 mV**  
**E(G)    ≤ 5.5 mV**
- 11.3 - In addition EFF.RET. fader opened, EFFECT ON and program selector to program 3

Caution: Voltage here in rms

- E(F)    ≤ 8.5 mV**
- 11.4 - EFFECT OFF, but MONO CHANNEL fader  
and Gain control fully opened
- E(F)    ≤ 45 mV**  
**E(G)    ≤ 85 mV**
- 11.5 - EFFECT OFF, but STEREO CHANNEL fader  
and Gain control fully opened
- E(F)    ≤ 45 mV**  
**E(G)    ≤ 85 mV**
- 11.6 - MASTER fader closed, TAPE RET. opened
- E(F)    ≤ 5.7 mV**  
**E(G)    ≤ 4 mV**
- 11.7 - MASTER fader opened, LINE IN opened
- E(F)    ≤ 7 mV**  
**E(G)    ≤ 6 mV**
- 11.7 - MASTER fader opened, AUX RET. opened
- E(F)    ≤ 2.8 mV**  
**E(G)    ≤ 4.7 mV**

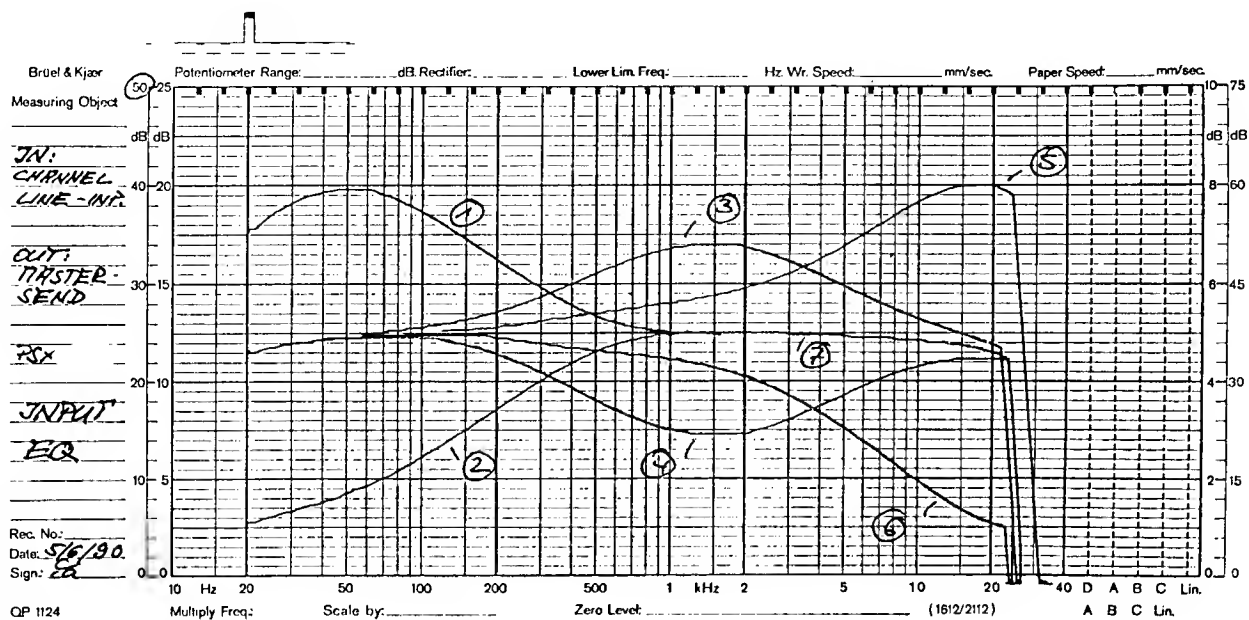
## 12. Phantom Power

If the slide switch PHANTOM POWER is ON, you can measure between PIN 2 and PIN 1 respectively PIN 3 and PIN 1 of the XLR socket an DC voltage: E(DC) = + 48 V

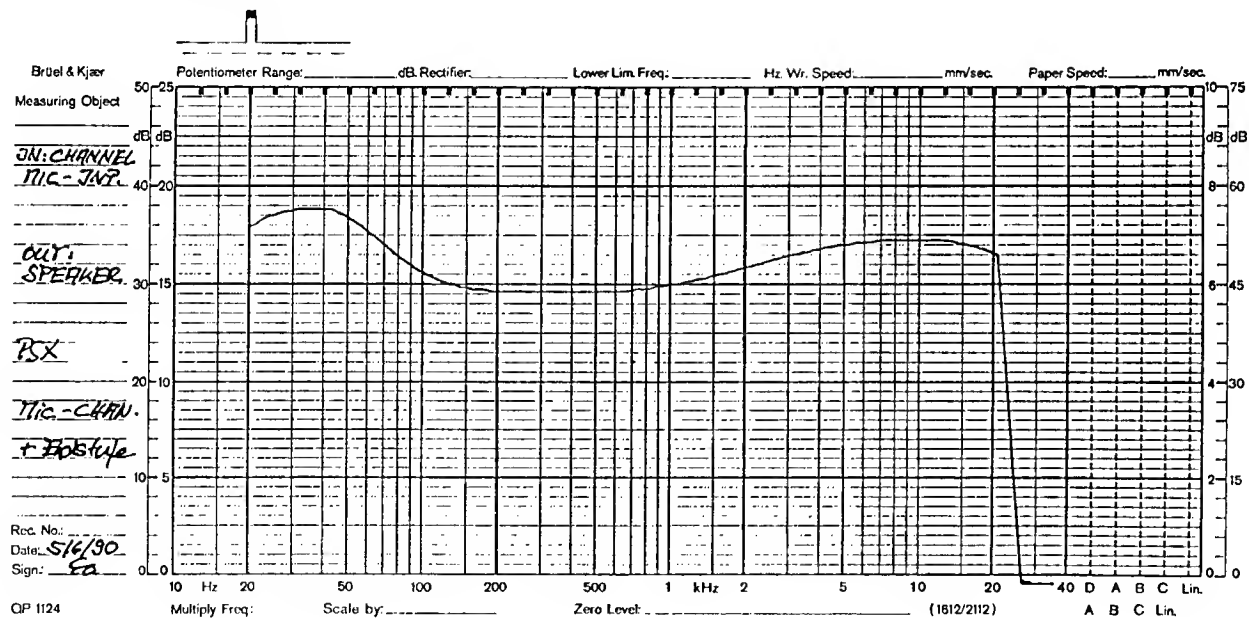
## 13. Power Amplifier

Input	E(I)	Test point	E(O)	Comment
MASTER RET. L/R	1.05 V	SPEAKER L/R	31.6 V	R(L) = 4 Ohms

to 10.1. EQ - input channel Mono/Stereo

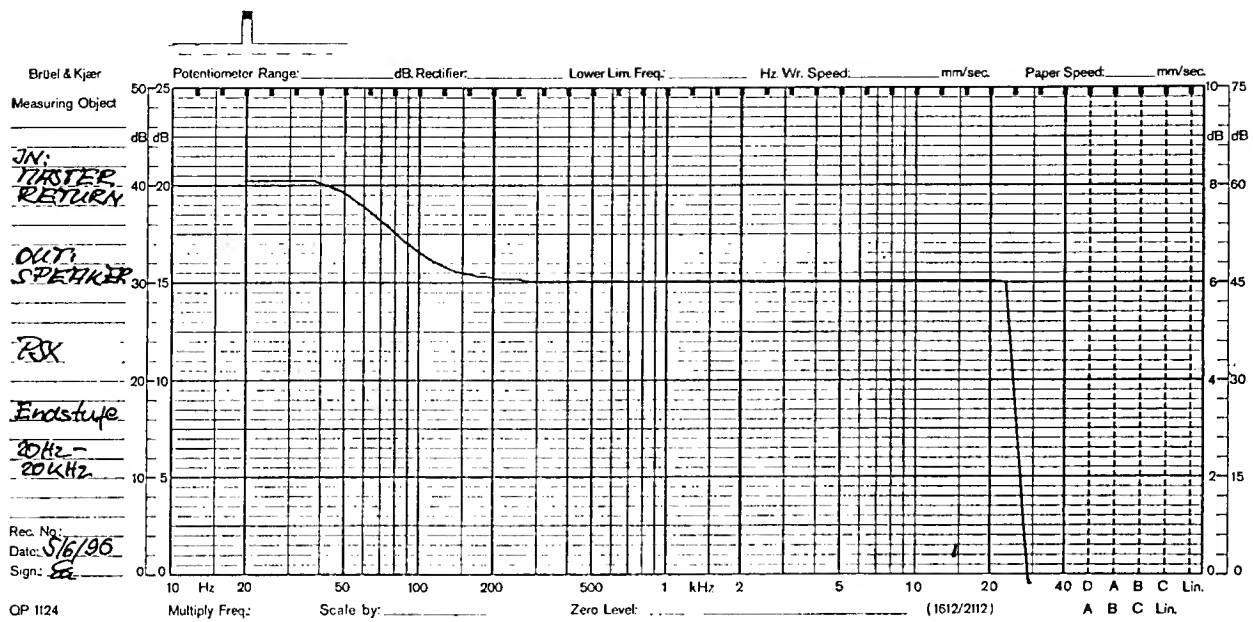


to 10.2. MIC --- power amp L/R

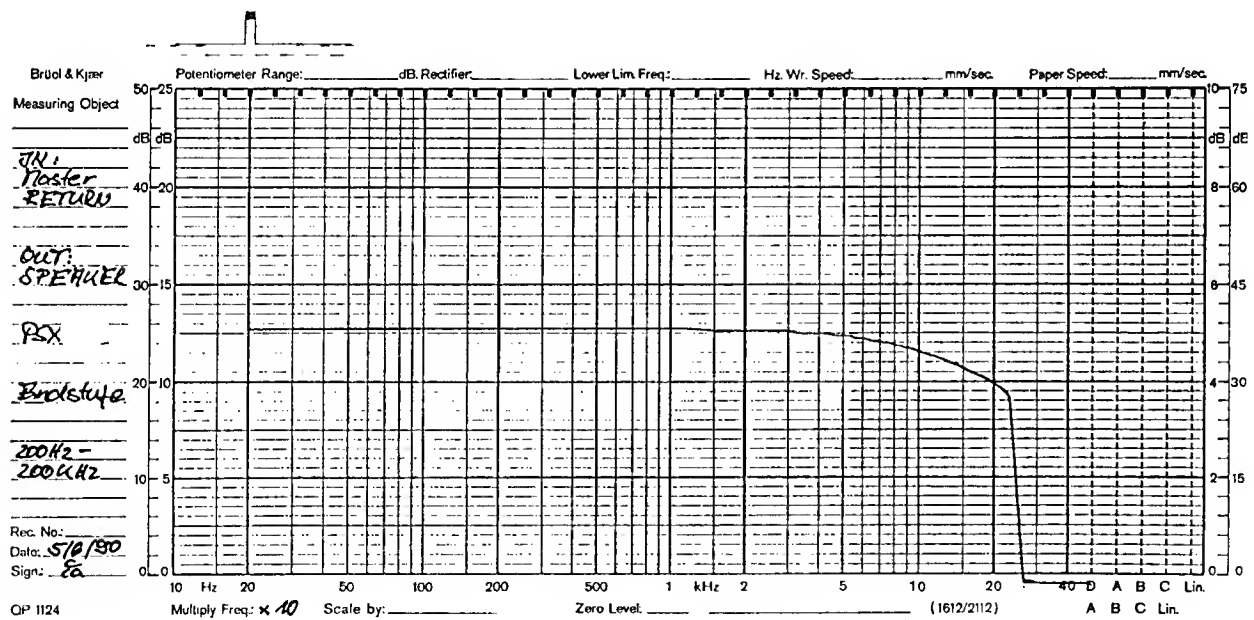


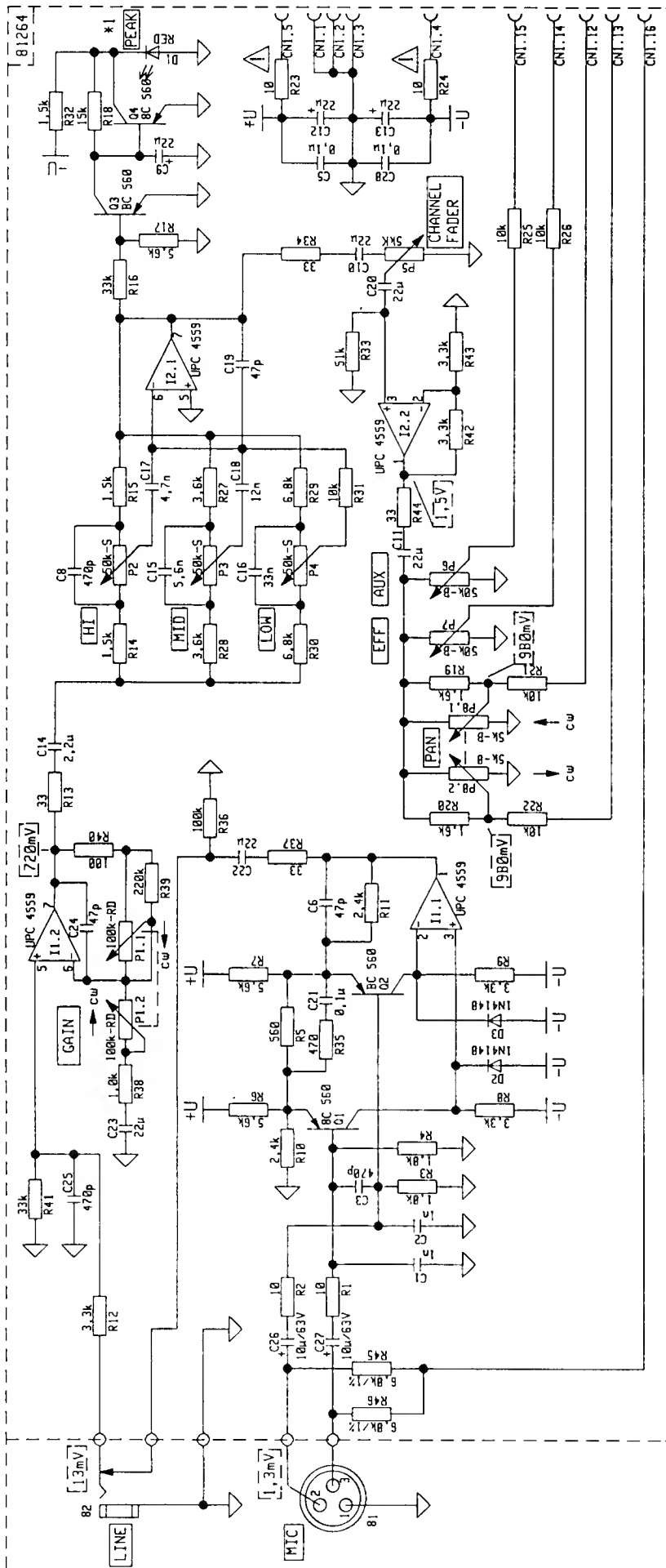


to 10.3. Power amp L/R 20 Hz - 20 kHz



to 10.4. Power amp L/R 200 Hz - 200 kHz





⚠ SICHERHEITSBREITUNG, DARF NUR DURCH GLEICHERTIGES

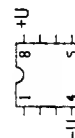
BAUTEIL ERSETZT WERDEN  
SAFETY COMPONENT (MUST BE REPLACED BY ORIGINAL PART)  
ELEMENT DE SECURITE PEUT SEULEMENT ETRE REMPLACÉ PAR  
UN ELEMENT EQUIVALENT

[ ] WECHSELSPANNUNG 1000 Hz GEMESSEN MIT ROHRENVOLTMETER

[ ] AC VOLTAGE 1000 Hz MEASURED WITH VTVM

[ ] TENSION ALTERNATIF 1000 Hz MESURE AVEC VOLTMETER D' Lampes

11, 12



Q1 - Q4



\*1 : PEAK leuchtet ab > 50 mV am LINE-Eingang

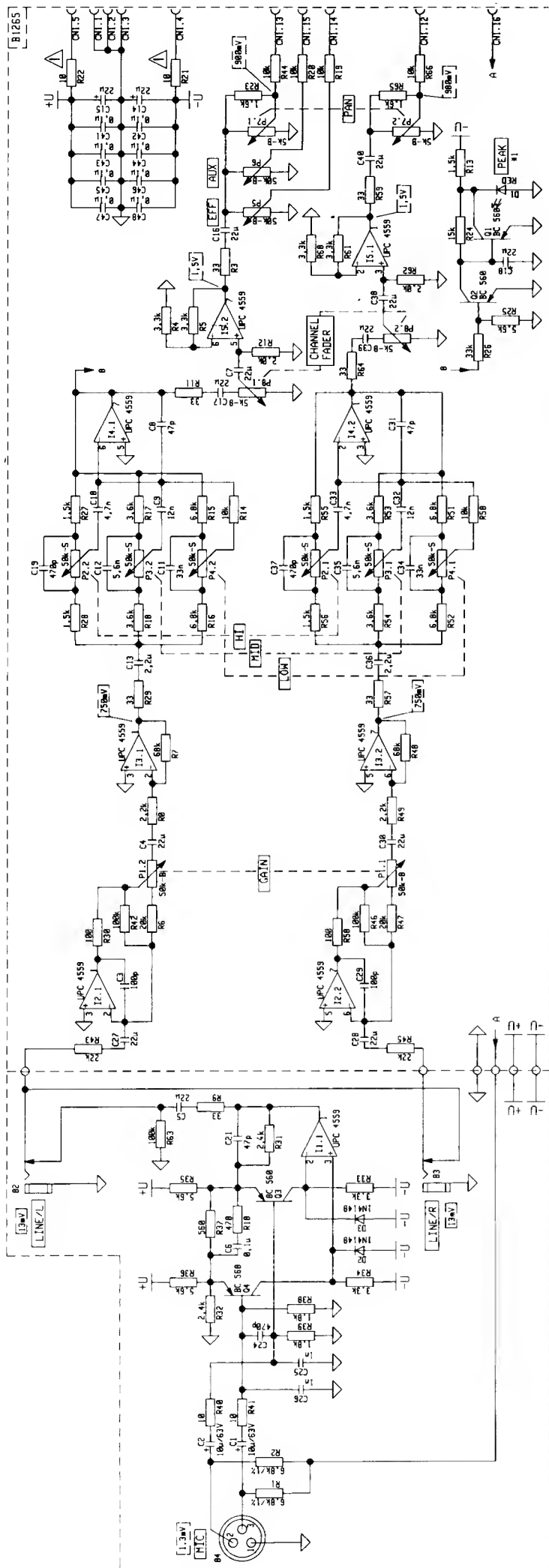
Anderungen vorbehalten! ALTERATIONS RESERVEE! MODIFICATIONS RESERVEES!

INPUT-CHANNEL-MONO  
81264

STROMLAUFPLAN

343 781

DYNACORD



⚠ SICHEREITSBÜTTEL DARF NUR DURCH GLEICHZEITIGES  
 ERSETZEN DES ORIGINAL-BAUTEILES ERSETZT WERDEN.  
 SAFETY COMPONENT MUST BE REPLACED BY ORIGINAL PART.

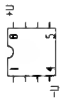
⚠ SÉCURITÉ: L'ÉLÉMENT DE SÉCURITÉ PEUT SEULEMENT ÊTRE REMPLACÉ PAR  
 UN ÉLÉMENT ÉQUIVALENT.

MEßSPANNUNG 1000 Hz GEMESSEN MIT ROHRENVOLTMETER  
 AC VOLTAGE 1000 Hz MEASURED WITH VTVM  
 TENSION ALTERNATIF 1000 Hz MESURE AVEC VOLTMETER D'AMPÈRES

01 - 04



11 - 15



RI : PEAK leuchtet ab 50 mV am LINE-IN-Eingang

Änderungen vorbehalten! ALTERATIONS RESERVED! MODIFICATIONS RESERVEES!  
 STEREO-LINE/MIC-CHANNEL  
 81265

STROMLAUFPLAN

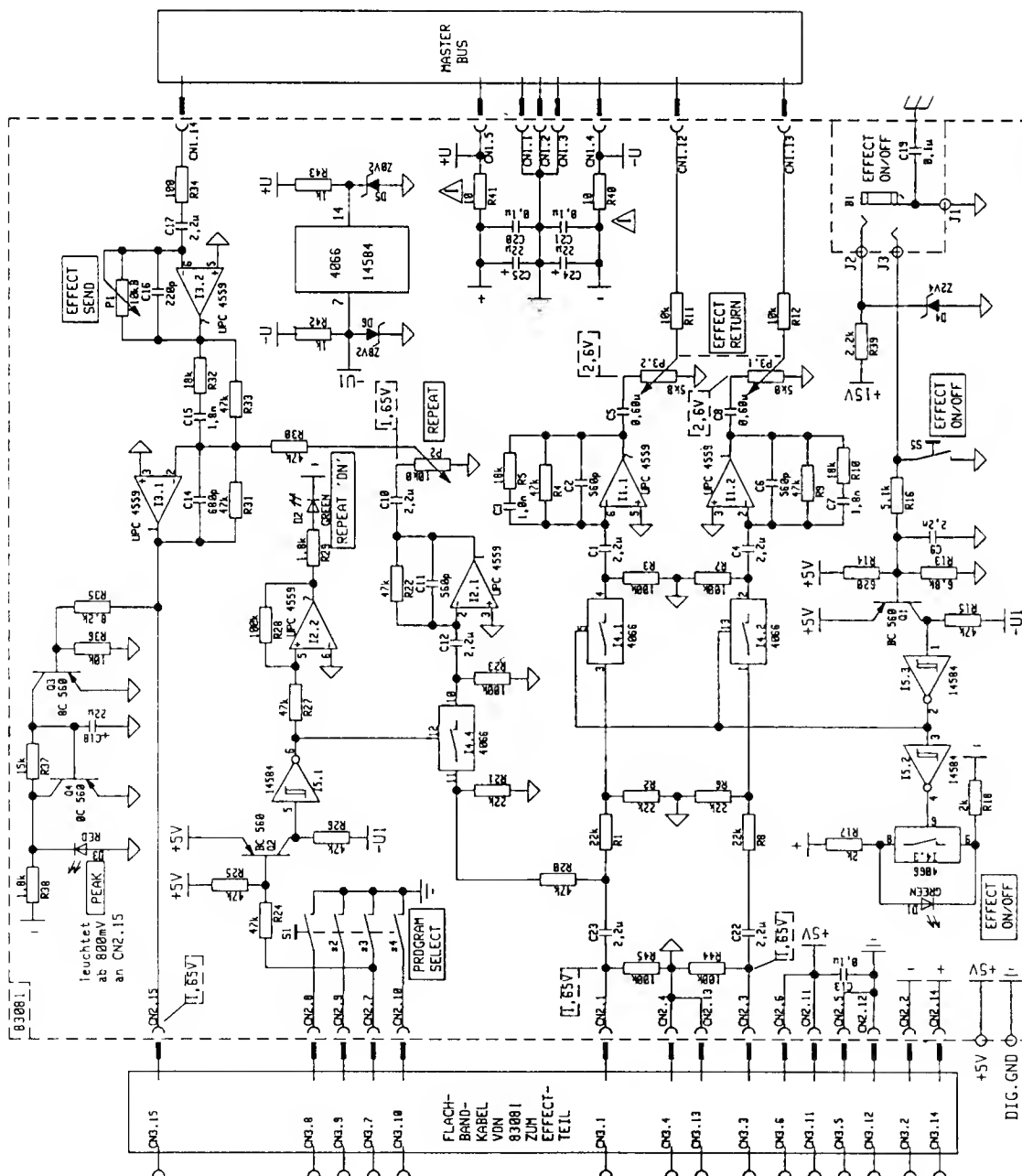
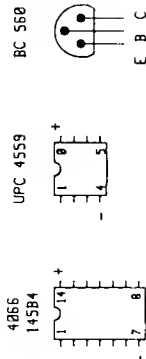
343 782

DYNACORD



⚠ SICHHERHEITSBAUTEIL, DARF NUR DURCH GLEICHWERTIGES  
BAUTEIL ERSETZT WERDEN  
SAFETY COMPONENT MUST BE REPLACED BY ORIGINAL PART  
ELEMENT DE SECURITE PEUT SEULEMENT ETRE REMPLACÉ PAR  
UN ÉLÉMENT ÉQUIVALENT

MECHSELSPANNUNG 1000 Hz GEMESSEN MIT ROHRENVOLTMETER  
AC VOLTAGE 1000 Hz MEASURED WITH VTVM  
TENSION ALTERNATIF 1000 Hz MESURE AVEC VOLTMETER D'LAMPES



Änderungen vorbehalten! ALTERATIONS RESERVED! MODIFICATIONS RESERVEES!

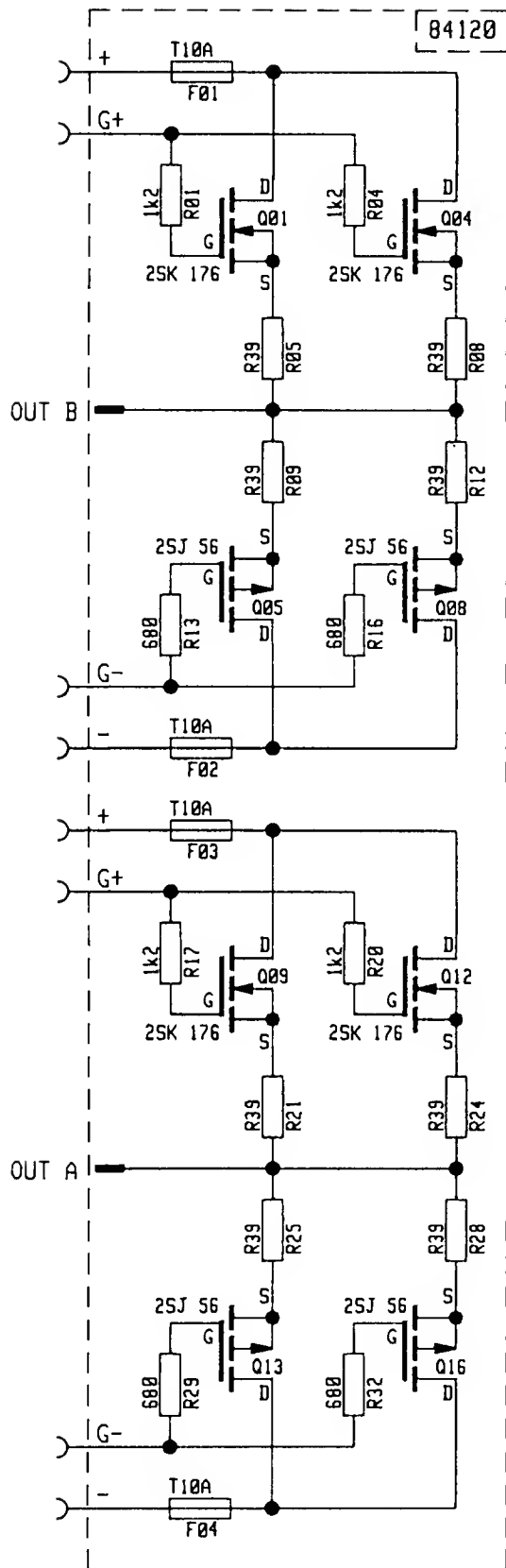
EFFECT-SUMME

STROMLAUFPLAN

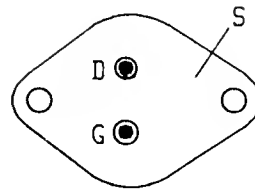
343 223

DYNACORD





2 SK 176  
2 SJ 56



Änderungen vorbehalten! ALTERATIONS RESERVED! MODIFICATIONS RESERVEES!

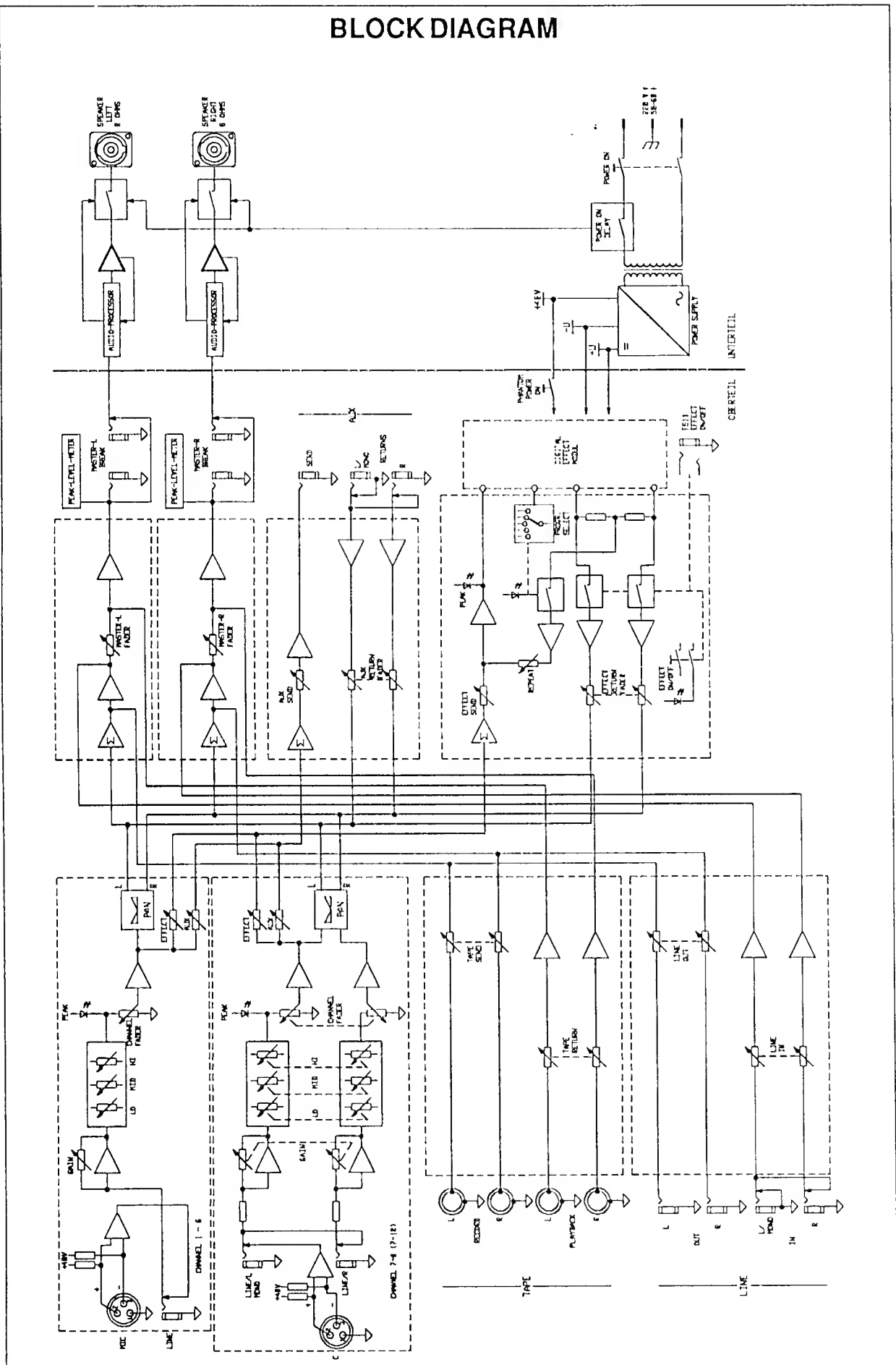
STEREO MOSFET POWER BLOCK

STROMLAUFPLAN

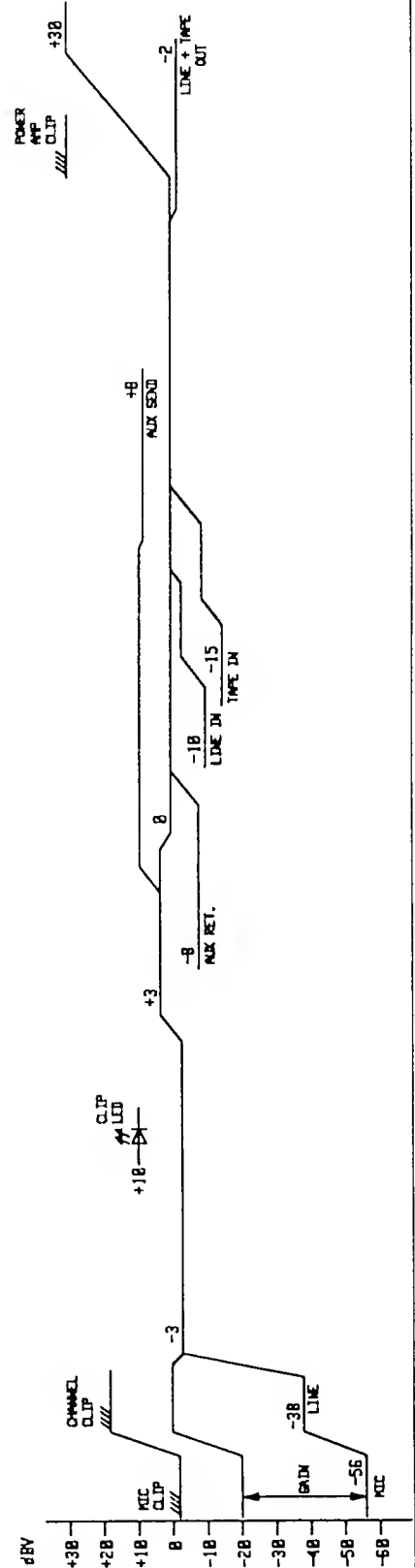
343 783

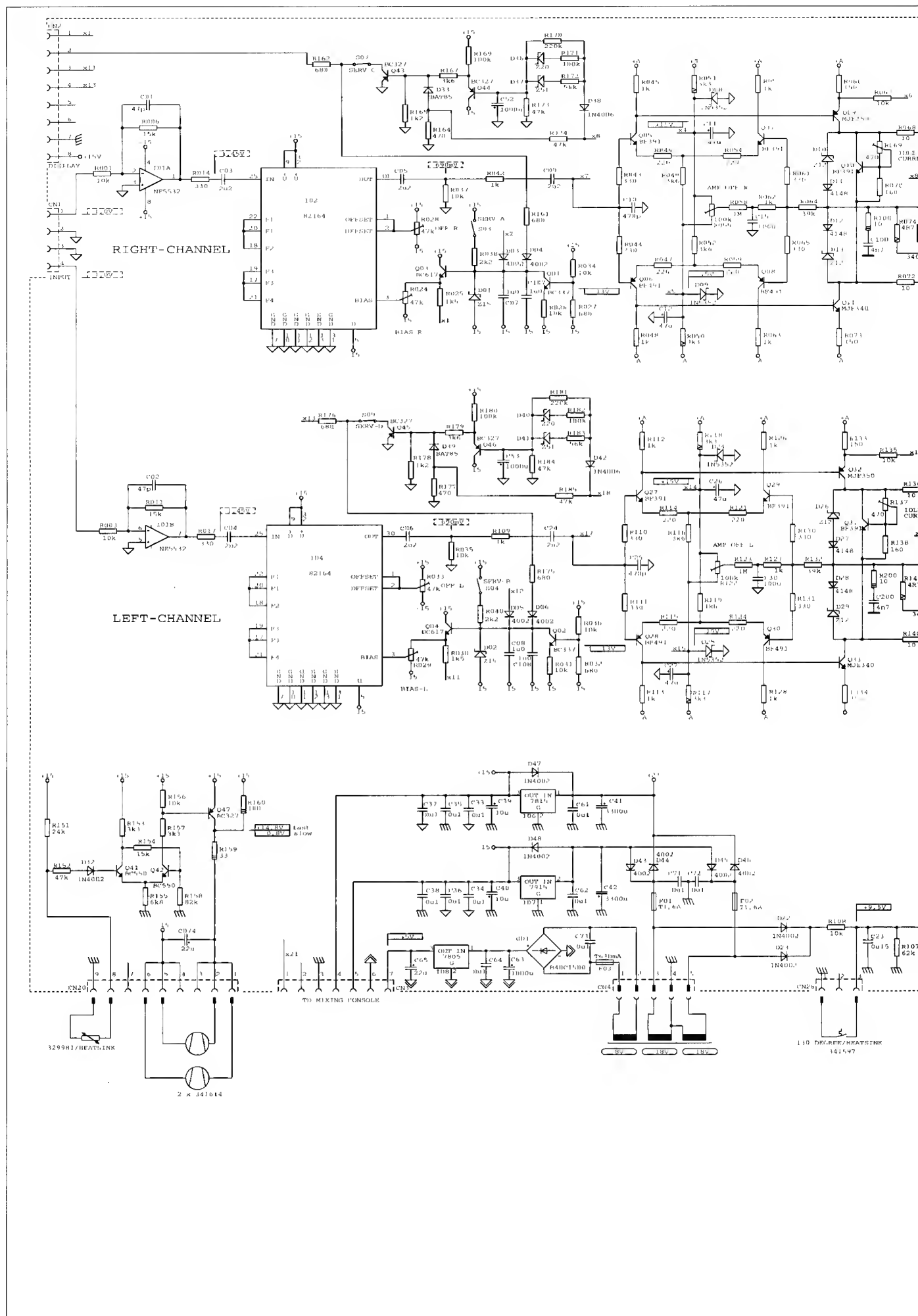
DYNACORD

# BLOCK DIAGRAM



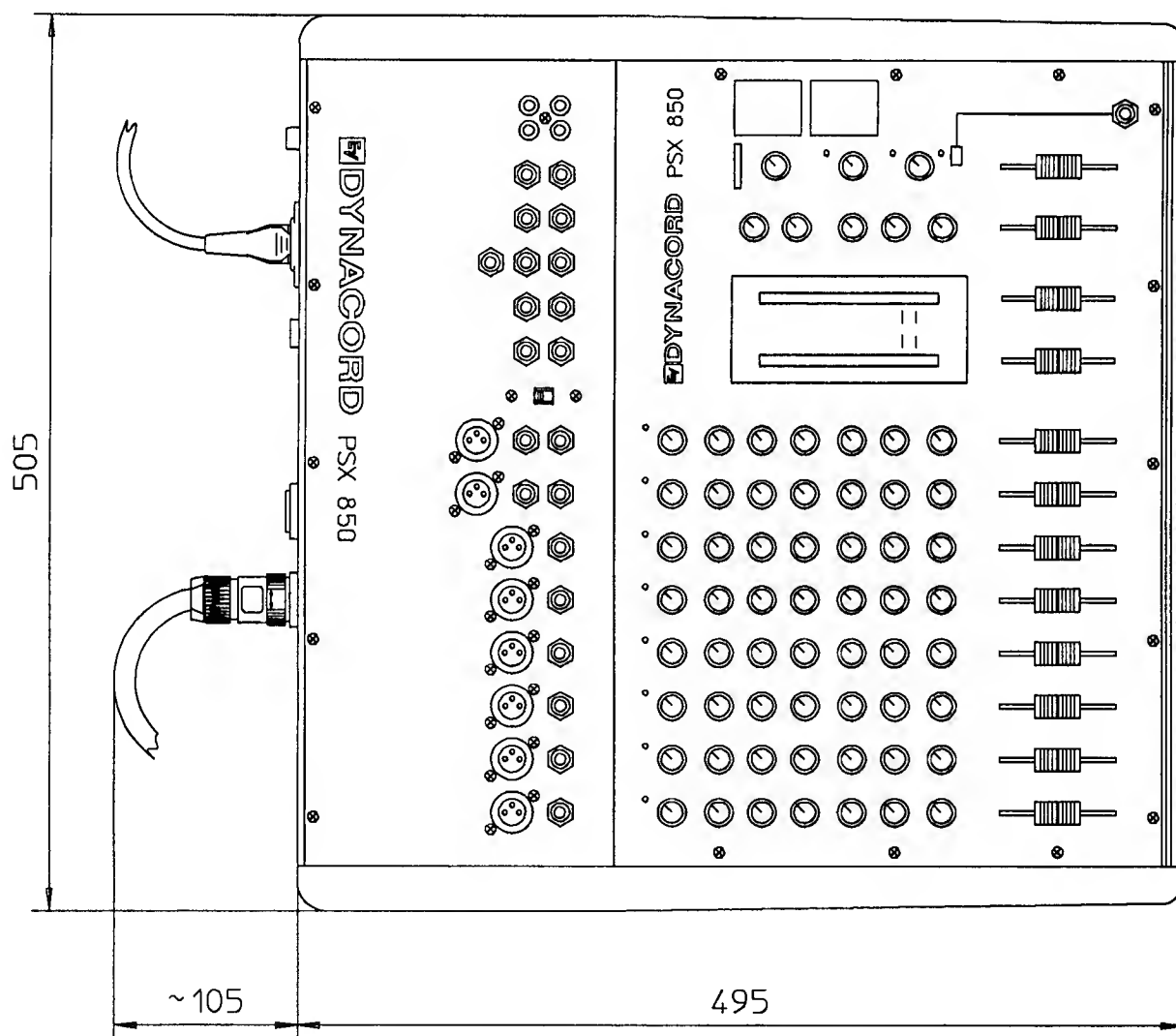
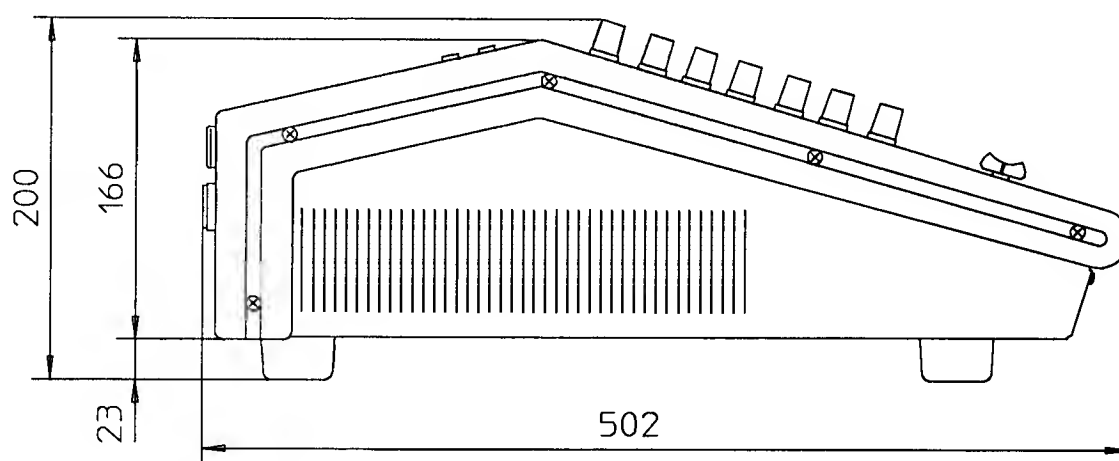


$$B_1B_2 = B_1B_3 = 1.8V, \text{ and}$$


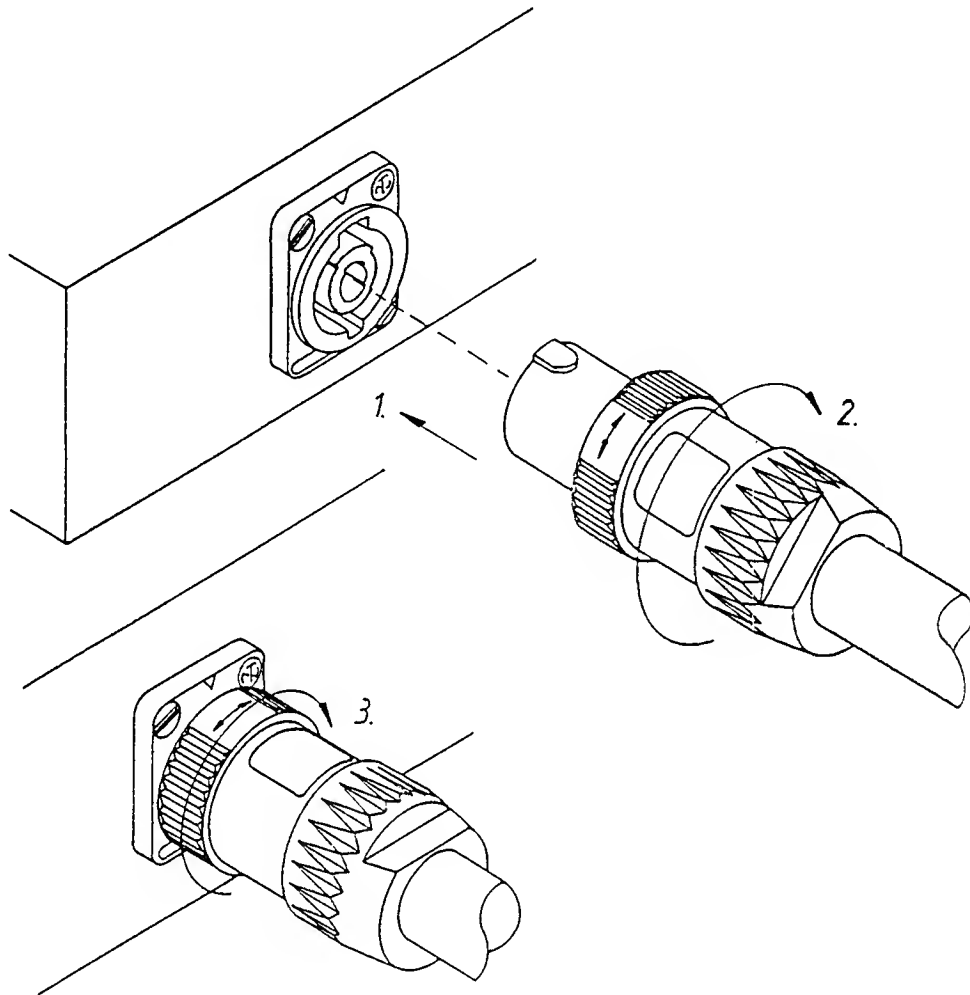




# **DIMENSIONS (in mm)**



## SPEAKON PLUG CONNECTORS



1. Insert plug into socket.
2. Turn main body by 30° , electrical contact will be made after turning only.
3. Turn security ring by 180° , to secure the connection.

Pos. in diagram	description	Part-No.	Pos. in diagram	description	Part-No.
C 001	KO-KER 0.1MF 50V	329201	C0001	socket HLJ 0268-01	301556
C 002	KO-KER 0.1MF 50V	329201	C0002	socket HLJ 0268-01	301556
C 003	KO-KER 0.1MF 50V	329201	C0009	KO-EL 22MF 25V	327815
C 004	KO-KER 0.1MF 50V	329201	C0012	KO-EL 22MF 25V	327815
S 001	sliding switch	335941	C0013	KO-EL 22MF 25V	327815
00010	plexiglas panel PSX 802	342783	D0001	LED red 3mm	342073
00020	rotary knob bl/red 14	343160	D0002	diode 1N 4148	301254
00030	rotary knob bl/wt 14	343139	D0003	diode 1N 4148	301254
00040	rotary knob bl/li 14	343161	I0001	IC UPC 4559 C	327364
00050	fader knob bl/wt	343162	I0002	IC UPC 4559 C	327364
00060	fader knob bl/red	343163	P0001	potentiometer 2x100kohm log	333801
00070	fader knob bl/red 4mm	343164	P0002	potentiometer 50kohm W(S)	334734
B 001	mains connector	303076	P0003	potentiometer 50kohm W(S)	334734
B 002	speaker socket 4pol.	341343	P0004	potentiometer 50kohm W(S)	334734
B 003	speaker socket 4pol.	341343	P0005	fader 5kohm A (log)	336292
C 001	capacitor S0 0.10 MF/250V	333014	P0006	potentiometer 50kohm lin	331230
00160	switch	334628	P0007	potentiometer 50kohm lin	331230
00180	push button black 12,5x7	337059	P0008	potentiometer 2x 5kohm lin	331233
00210	fuseholder	330605	Q0001	trans. BC 560 C	343431
00220	cap of fuse holder	330632	Q0002	trans. BC 560 C	343431
00010	fan TYP 8314 24V/DC	341614	Q0003	trans. BC 560 B	306928
00860	rubber foot	302815	Q0004	trans. BC 560 B	306928
00010	side part right PSX 802	343632	R0023	safety resistor 10 ohm	329215
00020	side part left PSX 802	343633	R0024	safety resistor 10 ohm	329215
58000	PCB power amp	343185	00020	PCB	812658
Q 001	trans. 2SK 176	337637	B0001	socket XLR 3pol.	341825
Q 004	trans. 2SK 176	337637	B0002	socket HLJ 0268-01	340984
Q 005	trans. 2SJ 56	337636	B0003	socket HLJ 0268-01	340984
Q 008	trans. 2SJ 56	337636	C0014	KO-EL 22MF 25V	327815
Q 009	trans. 2SK 176	337637	C0015	KO-EL 22MF 25V	327815
Q 012	trans. 2SK 176	337637	C0018	KO-EL 22MF 25V	327815
Q 013	trans. 2SJ 56	337636	C0025	KO-EL 22MF 25V	301556
Q 016	trans. 2SJ 56	337636	C0026	KO-EL 22MF 25V	301556
R 186	safety component	329981	D0001	LED red 3mm	342073
S 005	thermal cut out switch	339137	D0002	diode 1N 4148	346335
10000	PCB	841208	D0003	diode 1N 4148	346335
R005	wire-wound resistor 0,39ohm	341711	I0001	IC UPC 4559 C	327364
R008	wire-wound resistor 0,39ohm	341711	I0002	IC UPC 4559 C	327364
R009	wire-wound resistor 0,39ohm	341711	I0003	IC UPC 4559 C	327364
R012	wire-wound resistor 0,39ohm	341711	I0004	IC UPC 4559 C	327364
R021	wire-wound resistor 0,39ohm	341711	I0005	IC UPC 4559 C	327364
R024	wire-wound resistor 0,39ohm	341711	P0001	potentiometer 2x 50kohm lin	332947
R025	wire-wound resistor 0,39ohm	341711	P0002	potentiometer 2x 50kohm lin	332947
R028	wire-wound resistor 0,39ohm	341711	P0003	potentiometer 2x 50kohm lin	332947
0005	fuse holder	306838	P0004	potentiometer 2x 50kohm lin	332947
00005	transformer power	341783	P0005	potentiometer 50kohm lin	331230
00045	switch thermo UP6 90C	332753	P0006	potentiometer 50kohm lin	331230
00010	PCB	812648	P0007	potentiometer 2x 5kohm lin	331233
B0001	socket XLR 3pol.	341825	P0008	fader 2x 5kohm A lin	336293
B0002	socket HLJ 0268-01	340984	Q0001	trans. BC 560 B	306928
			Q0002	trans. BC 560 B	306928
			Q0003	trans. BC 560 C	343431

Pos. in diagram	description	Part-No.	Pos. in diagram	description	Part-No.
Q0004	trans. BC 560 C	343431	R0102	Res. trimpot 10 kOhm 1in	308645
R0021	safety resistor 10 ohm	329215	R0106	safety resistor 33 Ohm	328770
R0022	safety resistor 10 ohm	329215	R0111	safety resistor 33 Ohm	328770
00030	PCB	821658	00040	PCB	821668
C0101	KO-EL 2.2MF 50V	304986	C0021	KO-EL 22MF 25V	327815
C0102	KO-EL 2.2MF 50V	304986	C0022	KO-EL 22MF 25V	327815
C0103	KO-EL 2.2MF 50V	304986	I0001	IC UPC 4559 C	327364
C0104	KO-EL 2.2MF 50V	304986	I0002	IC UPC 4559 C	327364
C0105	KO-EL 22MF 25V	327815	I0003	IC UPC 4559 C	327364
C0106	KO-EL 22MF 25V	327815	I0004	IC UPC 4559 C	327364
C0107	KO-EL 2.2MF 50V	304986	P0001	fader 2x 5kohm A 1in	336293
D0003	diode zener BZX 85C 13V	304363	P0002	potentiometer 2x5kohm log	333401
D0004	diode zener BZX 85C 13V	304363	P0003	potentiometer 2x5kohm log	333401
D0101	LED red 2,5x5mm	334694	P0004	potentiometer 10kohm B 1in	331231
D0102	LED red 2,5x5mm	334694	P0005	potentiometer 2x5kohm log	333401
D0103	LED red 2,5x5mm	334694	P0006	potentiometer 2x5kohm log	333401
D0104	LED green 2,5x5mm	334693	R0036	safety resistor 10 ohm	329215
D0105	LED green 2,5x5mm	334693	R0037	safety resistor 10 ohm	329215
D0106	LED green 2,5x5mm	334693			
D0107	LED green 2,5x5mm	334693	00050	PCB	830818
D0108	LED green 2,5x5mm	334693	B0001	phone jack	340985
D0109	LED green 2,5x5mm	334693	C0014	phone jack	301549
D0110	LED yellow 2,5x5mm	343413	C0018	KO-EL 22MF 25V	327815
D0111	LED yellow 2,5x5mm	343413	C0024	KO-EL 22MF 25V	327815
D0112	LED red 2,5x5mm	334694	C0025	KO-EL 22MF 25V	327815
D0113	LED red 2,5x5mm	334694	D0001	LED green 3mm	341823
D0114	diode 1N 4148	301254	D0002	LED green 3mm	341823
D0201	LED red 2,5x5mm	334694	D0003	LED red 3mm	342073
D0202	LED red 2,5x5mm	334694	D0004	diode zener BZX 55C 2V4	329511
D0203	LED red 2,5x5mm	334694	D0005	diode zener ZPD 8V2	309403
D0204	LED green 2,5x5mm	334693	D0006	diode zener ZPD 8V2	309403
D0205	LED green 2,5x5mm	334693	I0001	IC UPC 4559 C	327364
D0206	LED green 2,5x5mm	334693	I0002	IC UPC 4559 C	327364
D0207	LED green 2,5x5mm	334693	I0003	IC UPC 4559 C	327364
D0208	LED green 2,5x5mm	334693	I0004	IC 4066 BE	341204
D0209	LED green 2,5x5mm	334693	I0005	IC MC 14584 BCP	309714
D0210	LED yellow 2,5x5mm	343413	P0001	potentiometer 10kohm B 1in	331231
D0211	LED yellow 2,5x5mm	343413	P0002	potentiometer 10kohm B 1in	331231
D0212	LED red 2,5x5mm	334694	P0003	fader 2x 5kohm A 1in	336293
D0213	LED red 2,5x5mm	334694	Q0001	trans. BC 560 B	306928
I0001	IC NE 5532 N	327197	Q0002	trans. BC 560 B	306928
I0002	IC UPC 4559 C	327364	Q0003	trans. BC 560 B	306928
I0003	IC UPC 4559 C	327364	Q0004	trans. BC 560 B	306928
I0101	IC BA 683 A	343286	R0040	safety resistor 10 ohm	329215
I0102	IC BA 683 A	343286	R0041	safety resistor 10 ohm	329215
P0001	fader 5kohm log semi	341909	S0001	switch	337647
P0002	fader 5kohm log semi	341909	S0005	switch	332347
Q0101	trans. J 111 A	330264			
Q0102	trans. J 111 A	330264	00060	PCB	841168
R0025	safety resistor 10 ohm	329215	C011	KO-EL 47MF 50V	343530
R0026	safety resistor 10 ohm	329215	C012	KO-EL 47MF 50V	343530
R0101	Res. trimpot 10 kOhm 1in	308645	C026	KO-EL 47MF 50V	343530

Pos. in diagram	description	Part-No.	Pos. in diagram	description	Part-No.
C027	K0-EL 47MF 50V	343530	D042	diode 1N 4006	305739
C039	K0-EL 10MF 35V	307445	D043	diode 1N 4002	304360
C040	K0-EL 10MF 35V	307445	D044	diode 1N 4002	304360
C041	K0-EL 10MF 35V	333413	D045	diode 1N 4002	304360
C042	K0-EL 10MF 35V	333413	D046	diode 1N 4002	304360
C044	K0-EL 4700.000MF 100V	340437	D047	diode 1N 4002	304360
C045	K0-EL 4700.000MF 100V	340437	D048	diode 1N 4002	304360
C046	K0-EL 4700.000MF 100V	340437	D049	break down diode ZPX 30V	304364
C047	K0-EL 4700.000MF 100V	340437	D050	break down diode ZPX 30V	304364
C049	safety component	341714	D051	diode zener ZPD 12V 0,5W	305738
C052	K0-EL 1000MF 25V	337597	D052	diode zener ZPD 12V 0,5W	305738
C053	K0-EL 1000MF 25V	337597	D053	diode 1N 4002	304360
C065	K0-EL 22MF 25V	327815	D054	diode 1N 4002	304360
C066	K0-EL 0.330MF 50V	333249	E002	relay RP 310 024	330404
C074	K0-EL 22MF 25V	327815	E003	relay RP 310 024	330404
D001	diode zener BZX 55C 15V	309450	E004	relay RP 310 024	330404
D002	diode zener BZX 55C 15V	309450	G001	rectifier B40 C1500	331965
D003	diode 1N 4002	304360	G002	rectifier KBPC 35-04	343270
D004	diode 1N 4002	304360	I001	IC NE 5532 N	327197
D005	diode 1N 4002	304360			
D006	diode 1N 4002	304360	I002	PCA Modul kompl.	821648
D008	diode zener 1N 5352B 15V	331422			
D009	diode zener 1N 5352B 15V	331422	I004	PCA Modul kompl.	821648
D010	diode zener ZPD 12V 0,5W	305738			
D011	diode 1N 4148	301254	I006	IC LM 340 T-15	308292
D012	diode 1N 4148	301254	I007	IC LM 340 T-15	344746
D013	diode zener ZPD 12V 0,5W	305738	I008	IC MC 78 T 05 CT	331932
D014	diode zener BZX 55C 2V4	329511	I009	IC UA 7824 UC	329255
D015	diode zener ZPD 12V 0,5W	305738	L001	coil DCN 340092	340092
D016	diode MBS 4991	338875	L002	coil DCN 340092	340092
D017	diode MBS 4991	338875	Q001	trans. BC 337-25	307150
D018	diode zener TYP 1,5 KE120CA	339061	Q002	trans. BC 337-25	307150
D019	diode zener TYP 1,5 KE120CA	339061	Q003	trans. BC 617	334633
D020	diode 1N 4002	304360	Q004	trans. BC 617	334633
D021	diode 1N 4002	304360	Q005	trans. BF 391	307911
D022	diode 1N 4002	304360	Q006	trans. BF 491	307912
D023	diode 1N 4002	304360	Q007	trans. BF 391	307911
D024	diode zener 1N 5352B 15V	331422	Q008	trans. BF 491	307912
D025	diode zener 1N 5352B 15V	331422	Q009	trans. MJE 350	338869
D026	diode zener ZPD 12V 0,5W	305738	Q010	trans. BF 391	307911
D027	diode 1N 4148	301254	Q011	trans. MJE 340	338868
D028	diode 1N 4148	301254	Q012	trans. MJE 340	338868
D029	diode zener ZPD 12V 0,5W	305738	Q013	trans. MJE 350	338869
D030	diode zener BZX 55C 2V4	329511	Q014	trans. MJE 350	338869
D031	diode zener ZPD 12V 0,5W	305738	Q015	trans. BC 560 B	306928
D032	diode 1N 4002	304360	Q016	trans. BC 337-25	307150
D033	diode BAT 85	301297	Q017	trans. BC 337-25	307150
D036	diode zener ZPD 20V 0,5W	301310	Q018	trans. BF 391	307911
D037	diode zener ZPD 51V 0,5W	341613	Q019	triac MAC 223-6	338876
D038	diode 1N 4006	305739	Q020	triac MAC 223-6	338876
D039	diode BAT 85	301297	Q021	trans. BC 327-25	307430
D040	diode zener ZPD 20V 0,5W	301310	Q022	trans. BC 327-25	307430
D041	diode zener ZPD 51V 0,5W	341613	Q023	trans. BC 550 B	301184



Pos. in diagram	description	Part-No.	Pos. in diagram	description	Part-No.
Q024	trans. BC 550 B	301184	00101	fuse holder	306838
Q025	trans. BC 550 B	301184	00102	fuse holder	306838
Q026	trans. BC 550 B	301184			
Q027	trans. BF 391	307911	00080	PCB	861778
Q028	trans. BF 491	307912	B0001	phone jack	341596
Q029	trans. BF 391	307911	B0002	phone jack	341596
Q030	trans. BF 491	307912	B0003	phone jack	341596
Q031	trans. BF 391	307911	B0004	phone jack	341596
Q032	trans. MJE 350	338869	B0005	phone jack	341596
Q033	trans. MJE 340	338868	B0006	phone jack	341596
Q034	trans. MJE 340	338868	B0007	phone jack	341596
Q035	trans. MJE 350	338869	B0008	phone jack	341596
Q036	trans. MJE 350	338869	B0009	phone jack	341596
Q037	trans. BC 560 B	306928	B0010	phone jack	341596
Q038	trans. BC 337-25	307150	B0011	phone jack	341596
Q039	trans. BC 337-25	307150	00050	shorting plug	306397
Q040	trans. BF 391	307911	C 101	safety component	343489
Q041	trans. BC 550 B	301184	C 102	safety component	343489
Q042	trans. BC 550 B	301184	C 103	safety component	343489
Q043	trans. BC 327-25	307430	C 124	K0-EL 1 MF 50V	340520
Q044	trans. BC 327-25	307430	C 177	K0-EL 1 MF 50V	340520
Q045	trans. BC 327-25	307430	C 178	K0-EL 1 MF 50V	340520
Q046	trans. BC 327-25	307430	C 179	K0-EL 1 MF 50V	340520
Q047	trans. BC 327-25	307430	D 101	diode 1N 4002	304360
Q048	trans. BD 241B	301236	J 101	IC socket 16 pol	305745
R024	Res. trimpot 47 kohm lin	307602	U 101	IC MB 635213	344923
R028	Res. trimpot 47 kohm lin	307602	U 102	IC CXK 58257	344927
R029	Res. trimpot 47 kohm lin	307602	U 103	IC CXK 58257	344927
R033	Res. trimpot 47 kohm lin	307602	U 104	IC CXK 58257	344927
R050	wire-wound resistor 3,3kohm	341712	U 114	IC MC 79 L 05 ACP	309721
R051	wire-wound resistor 3,3kohm	341712	00010	IC socket 28 pol	332354
R055	Res. trimpot 100kohm lin	308691			
R069	Res. trimpot 470 ohm lin	331427			
R074	wire-wound resistor 4,7ohm	341713			
R077	wire-wound resistor 3,3kohm	341712			
R117	wire-wound resistor 3,3kohm	341712			
R118	wire-wound resistor 3,3kohm	341712			
R122	Res. trimpot 100kohm lin	308691			
R137	Res. trimpot 470 ohm lin	331427			
R142	wire-wound resistor 4,7ohm	341713			
R144	wire-wound resistor 3.3kohm	341712			
R187	safety component	333819			
R190	safety resistor 10 ohm	329215			
S003	control element on/off	327947			
S004	control element on/off	327947			
S007	control element on/off	327947			
S009	control element on/off	327947			
S012	mains switch	334626			
00030	connector 4pol	306609			
00045	connector 9pol	306446			
00070	shorting plug	306397			
00072	shorting plug	306397			
00100	fuse holder	306838			

## WARRANTY (Limited)

Electro-Voice products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Electro-Voice or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Electro-Voice or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Electro-Voice at 600 Cecil Street, Buchanan, MI 49107 (616/695-6831) and/or Electro-Voice West, at 8294 Doe Avenue, Visalia, CA 93291 (209/651-7777). **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Electro-Voice Electronics** are guaranteed against malfunction due to defects in materials or workmanship for a period of three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

Service and repair address for this product: Electro-Voice, Inc. 600 Cecil Street, Buchanan, Michigan 49107.

Specifications subject to change without notice.



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